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GENERAL STATEMENTS AS TO THE COURSES OF INSTRUCTION.

The Johns Hopkins University will commence its twentieth year of instruction on the first of October, 1895. The work will go forward in these divisions:

The Graduate department, in which arrangements are made for the instruction of advanced students in the higher studies of literature and science;

The Undergraduate or Collegiate department, in which students receive a liberal education leading up to the degree of Bachelor of Arts;

The Medical department, in which students who have already received a liberal education (including the modern languages and the natural sciences) are received as candidates for the degree of Doctor of Medicine, and in which Doctors of Medicine may attend special courses.

In other words, arrangements are made for the instruction of the following classes:

1. Graduate students and other qualified persons desiring to continue for one or more years their liberal education, and possibly to become candidates for the degree of Doctor of Philosophy.

2. Graduate students and other qualified persons wishing to proceed to the degree of Doctor of Medicine.

3. Doctors of Medicine who desire to follow special courses of lectures and laboratory work.

4. Undergraduates looking forward to the degree of Bachelor of Arts.

5. Special students who have not received an academic degree and are not candidates for a degree, but who desire to follow special courses of instruction in literature and science.

The medical department is open to women; the other departments are not.

A new academic building, called McCoy Hall, in commemoration of its donor, is now occupied. It contains the library and the class-rooms in language, literature, history, and philosophy,—superseding the temporary structures hitherto in use.

Laboratories are provided in Chemistry, Physics, Electricity, Geology and Mineralogy, and in Biology, Anatomy, Physiology, Zoölogy, Pathology.

Seminaries are organized in the Greek, Latin, French, German, English, Sanskrit, and Semitic languages, and also in History and Political Science. There are various scientific associations and journal clubs which hold regular meetings.

The Library contains more than seventy thousand volumes, part of which are kept in the central reading-room, while the remainder of the books are distributed according to their subjects in the different laboratories and seminaries.

The Library of the Peabody Institute, which contains one hundred and twenty thousand volumes, is a most important addition to the attractions of Baltimore. These books are selected with reference to the wants of scholars in various departments. They are well chosen, well arranged, well bound, and well catalogued, and are accessible daily from nine in the morning until half-past ten in the evening. The Provost and librarians do everything in their power to favor the studies of those who are engaged in scientific or literary work.

The proximity of Baltimore to Washington enables the students of this University at a very moderate expense to visit the libraries, museums, and scientific foundations of the Capital. The relations between the scientific men of the two cities are friendly and the authorities of the government establishments in Washington have always shown an enlightened and generous spirit in the encouragement of all students who desire to acquire or advance knowledge.

The academic year extends from the first of October to the fifteenth of June, with two recesses,—one at Christmas and one at Easter.

The charge for tuition is one hundred and fifty dollars per annum in the graduate and undergraduate departments, and two hundred dollars in the medical department.

Board and lodging, including fire and light, may be had for six dollars per week. Many students pay less.

D. C. GILMAN, *President of the Johns Hopkins University.*

PROGRAMMES FOR 1895–96.

The following courses in literature and science are offered for the academic year which begins October 1, 1895. They are open to properly qualified young men, according to conditions varying somewhat in each department. The Annual Register, giving full statements as to the regulations and work of the University, will be sent on application.

Separate announcements of the Medical Courses will be sent on application.

JOHN J. ABEL, *Professor of Pharmacology,*
courses in Pharmacology.

H. B. ADAMS, *Professor of American and Institutional History,*
(*a*) Seminary of History and Politics.
(*b*) Germanic and Early English History, American Colonial and Institutional History, Nineteenth Century, History of Civilization, etc.
(*c*) with assistance, undergraduate courses in History and Politics.

M. BLOOMFIELD, *Professor of Sanskrit and Comparative Philology,*
(*a*) Linguistic Science and Comparative Grammar.
(*b*) Indo-Iranian Languages.

J. W. BRIGHT, *Professor of English Philology,*
(*a*) English Seminary.
(*b*) English Philology, Anglo-Saxon and Middle English Texts, Anglo-Saxon, etc.

W. K. BROOKS, *Professor of Zoölogy,*
(*a*) will direct the laboratory work in Biology.
(*b*) Principles of Zoölogy, Marine Zoölogy, Zoölogical Seminary, etc.

WM. HAND BROWNE, *Professor of English Literature,*
courses in English Literature.

WM. B. CLARK, *Professor of Organic Geology,*
(*a*) will direct the Laboratory work in Geology.
(*b*) General Geology, Invertebrate Palæontology, Historical Geology, etc.

T. CRAIG, *Professor of Pure Mathematics,*
Mathematical Seminary, Algebraic Integrals, Theory of Surfaces, etc.

A. M. ELLIOTT, *Professor of Romance Languages,*
(*a*) will conduct the Romance Seminary.
(*b*) will give advanced courses in the Romance Languages, including French Dialects, Popular Latin, etc.

G. H. EMMOTT, *Professor of Roman Law and Comparative Jurisprudence,*
Development of the Common and Statute Law of England, English Constitutional Law and History, Sources of English History, etc.

B. L. GILDERSLEEVE, *Professor of Greek,*
(*a*) will direct the Greek Seminary (Greek Historians, etc.)
(*b*) Practical Exercises in Greek.
(*c*) Conferences on Greek Historiography.
(*d*) Greek Syntax; Hermeneutics and Criticism.

HERBERT E. GREENE, *Collegiate Professor of English,*
Rhetoric, English Composition, and English Literature.

E H. GRIFFIN, *Professor of the History of Philosophy,*
(*a*) advanced courses in Modern Philosophy and Ethics.
(*b*) undergraduate courses in Logic, Psychology, and Ethics.

P. HAUPT, *Professor of the Semitic Languages,*
(*a*) will conduct the Assyrian Seminary.
(*b*) Biblical Philology, Hebrew, Ethiopic, Arabic, etc.

W. S. HALSTED, *Professor of Surgery,*
courses in Surgery.

W. H. HOWELL, *Professor of Physiology,*
(*a*) will conduct the Physiological Seminary.
(*b*) courses in Physiology.

H. M. HURD, *Professor of Psychiatry,*
courses in Psychiatry.

H. A. KELLY, *Professor of Gynecology,*
courses in Gynecology.

FRANKLIN P. MALL, *Professor of Anatomy,*
courses in Anatomy.

H. N. MORSE, *Professor of Analytical Chemistry,*
(*a*) will assist in directing the Laboratory work in Chemistry.
(*b*) Analytical Methods, Chemistry of Carbon Compounds, etc.

WM. OSLER, *Professor of Medicine,*
Principles and Practice of Medicine.

IRA REMSEN, *Professor of Chemistry,*
(*a*) will direct the Laboratory work in Chemistry.
(*b*) Selected Topics in Advanced Chemistry.
(*c*) General Chemistry, Compounds of Carbon.

EDWARD RENOUF, *Collegiate Professor of Chemistry,*
(*a*) will assist in the Laboratory work in Chemistry.
(*b*) Inorganic Chemistry.

H. A. ROWLAND, *Professor of Physics,*
(*a*) will direct the work of the Physical Laboratory.
(*b*) will lecture on Thermodynamics, Heat Conduction, and Physical Optics.

MINTON WARREN, *Professor of Latin,*
(*a*) will conduct the Latin Seminary.
(*b*) Roman Historians, Historical Latin Grammar, Latin Inscriptions, etc.
(*c*) Terence and Plautus.

W. H. WELCH, *Professor of Pathology*,
(*a*) will direct the work of the Pathological Laboratory.
(*b*) Pathology and Bacteriology.

HENRY WOOD, *Professor of German*,
(*a*) will direct the German Seminary.
(*b*) Gothic, Old Norse, Swabian and Austrian Poets, etc.
(*c*) will direct, with assistance, undergraduate courses in German.

J. S. AMES, *Associate Professor of Physics*,
(*a*) undergraduate courses in General Physics.
(*b*) Applications of Dynamics to Physical Chemistry, Spectroscopy.
(*c*) Physical Seminary for advanced students.

E. A. ANDREWS, *Associate Professor of Biology*,
(*a*) will assist in the Laboratory work in Biology.
(*b*) General Biology, Comparative Embryology.

A. S. CHESSIN, *Associate Professor of Mathematics and Mechanics*,
(*a*) Elementary Theory of Functions, Transformation Groups, etc.
(*b*) Celestial Mechanics.

L. DUNCAN, *Associate Professor of Electricity*,
courses in Applied Electricity.

SIMON FLEXNER, *Associate Professor of Pathology*,
courses in Pathology.

C. L. POOR, *Associate Professor of Astronomy*,
Theoretical and Practical Astronomy, Astronomical Seminary, General Astronomy, etc.

A. RAMBEAU, *Associate Professor of Romance Languages*,
(*a*) French Phonetics and Pronunciation.
(*b*) undergraduate courses in French and Italian.

K. F. SMITH, *Associate Professor of Latin*,
(*a*) Roman Elegy and Epigram; Practical Exercises in Latin.
(*b*) Livy, Horace, Pliny, Juvenal, Lucretius, etc.

SIDNEY SHERWOOD, *Associate Professor of Political Economy*.
(*a*) Credit, Banking and Money, Advanced Economic Research, Economic Conference, etc.
(*b*) undergraduate courses in Political Economy.

E. H. SPIEKER, *Associate Professor of Greek and Latin*,
(*a*) Isokrates, Plato, Euripides, Demosthenes, Thukydides, Sophokles, etc.
(*b*) Greek Prose Composition.

J. M. VINCENT, *Associate Professor of History*,
(*a*) Social and Economic History of the Middle Ages, Early Modern Europe, Historical Conference.
(*b*) undergraduate courses in History.

L. F. BARKER, *Associate in Anatomy*,
courses in Anatomy.

G. P. DREYER, *Associate in Biology*,
(*a*) will assist in the Laboratory work in Biology.
(*b*) Animal Physiology, Histology.

J. M. T. FINNEY, *Associate in Surgery*,
courses in Surgery.

H. G. GEER, *Associate in Mechanical Engineering*,
courses in Machine Design and Mechanical Drawing.

H. S. HERING, *Associate in Electricity*,
courses in Applied Electricity.

L. S. HULBURT, *Associate in Mathematics*,
(*a*) Projective Theory of Curves and Surfaces.
(*b*) undergraduate courses in Mathematics.

C. JOHNSTON, *Associate in Semitic Languages*,
Hebrew, Assyrian, Arabic, etc.

E. B. MATHEWS, *Associate in Mineralogy*,
(*a*) will assist in the Laboratory Work in Geology.
(*b*) courses in Mineralogy, Petrography, etc.

L. E. MENGER, *Associate in Romance Languages*,
(*a*) courses in Italian, Old French, etc.

C. W. E. MILLER, *Associate in Greek*,
will assist in the work of the Greek Seminary.

W. W. RANDALL, *Associate in Chemistry*,
(*a*) will assist in the work of the Chemical Laboratory.
(*b*) Physical Chemistry, Inorganic Chemistry, etc.

W. S. THAYER, *Associate in Medicine*,
courses in Medicine.

J. WHITRIDGE WILLIAMS, *Associate in Obstetrics*,
courses in Obstetrics.

B. C. STEINER, *Associate in History*,
American Constitutional and Political History.

B. J. VOS, *Associate in German*,
(*a*) Middle High German, New High German Prose.
(*b*) undergraduate courses in German.

B. W. BARTON, *Lecturer in Systematic Botany*,
courses in Botany.

J. E. HUMPHREY, *Lecturer in Botany*,
courses in Botany.

THOMAS S. BAKER, *Assistant in German*,
undergraduate courses in German.

ABRAHAM COHEN, *Instructor in Mathematics*,
undergraduate courses in Mathematics.

F. DE HAAN, *Instructor in Romance Languages*,
Provençal, Old French Readings, Spanish.

A. B. FAUST, *Instructor in German*,
undergraduate courses in German.

J. E. GILPIN, *Instructor in Chemistry*,
will assist in the work of the Chemical Laboratory.

J. H. HOLLANDER, *Instructor in Economics*,
Historical Development of Economic Theories; Economic Development of Baltimore; Advanced Economics, etc.

H. C. JONES, *Instructor in Physical Chemistry*,
courses in Physical Chemistry.

G. C. KEIDEL, *Assistant in Romance Languages*,
Carlovingian Epic, French Versification, etc.

C. C. MARDEN, *Instructor in Romance Languages*,
Spanish Philology, and French.

CHARLES P. SIGERFOOS, *Assistant in Embryology and Zoölogy*,
will assist in the laboratory work in Zoölogy.

S. E. WHITEMAN, *Instructor in Drawing*,
courses in Drawing.

H. L. WILSON, *Instructor in Greek and Latin*,
undergraduate courses in Greek and Latin.

In addition to the courses mentioned above, lectures are given from time to time by non-resident lecturers. Among others, the persons named below will give courses in 1895–96:

Before the students of History and Politics:

Professor **D. R. DEWEY**, *of the Massachusetts Institute of Technology*,
on Conditions and Remedies of Non-Employment, etc.

Professor **E. R. L. GOULD**, *of the University of Chicago*,
on Social Economic Legislation.

Professor **JAMES SCHOULER**, *of Boston University*,
on the United States Constitution.

Dr. **W. W. WILLOUGHBY**, *of Washington, D. C.*,
on the Theory of the State.

Professor **WOODROW WILSON**, *of Princeton University*,
on Local Government.

Dr. **F. H. WINES**, *of Chicago*,
on Sociology.

Before the students of Geology:

Mr. **G. K. GILBERT**, *of the U. S. Geological Survey*,
on Physiographic Geology.

Mr. **BAILEY WILLIS**, *of the U. S. Geological Survey*,
on Stratigraphic and Structural Geology.

Before the students of Romance Languages:

Professor **F. M. WARREN**, *of Adelbert College*,
on French Literature.

MATHEMATICS AND ASTRONOMY.

The requirements of the government service having obliged Professor NEWCOMB to suspend his active duties in the University, he will at present act only as a general adviser in respect to the courses in Mathematics and Astronomy. The instruction will be given during the next session by Professor CRAIG, Associate Professors CHESSIN and POOR, Dr. L. S. HULBURT, Dr. A. COHEN, and such other instructors as may be required.

MATHEMATICS.

In advanced mathematics the courses below named, intended for graduate students, will be given:—

Professor CRAIG.

1. Algebraic Integrals.
Three times weekly, through the year.

2. Theory of Surfaces and lines traced on surfaces.
Three times weekly, through the year.

3. Mathematical Seminary.
Weekly, through the year.

The membership of the Mathematical Seminary is composed of the Director, the Fellows and Scholars in Mathematics, and such of the graduate students as show by their ability or attainments that they can profit by the Seminary work. This is partly pedagogical, partly historical, but for the most part consists in the development of topics assigned by the Director in his lectures. Each member of the Seminary is required to take part in the work, and at least once during the year to make a report on some important memoir or treatise which shall be assigned to him for review by the Director.

The work for the coming year will be for the most part connected with the Theory of Surfaces and Twisted Curves.

Dr. CHESSIN.

1. Elementary Theory of Functions.
Twice weekly, through the year.

2. Lie's theory of Transformation-Groups.
Twice weekly, through the year.

Dr. HULBURT.

1. Projective Theory of Curves and Surfaces.
Three times weekly, through the year.

The Undergraduate Courses will go forward as follows:

FOR CANDIDATES FOR MATRICULATION.

Algebra (practice and review); Solid Geometry; Plane Trigonometry; Analytic Geometry (straight line and loci).
Four times weekly, through the year.

FIRST YEAR.

Analytic Geometry.
Four times weekly, until December 21.

Differential and Integral Calculus.
Four times weekly, January 1 to end of year.

SECOND YEAR.

Determinants.
Four times weekly, until October 19.

Differential and Integral Calculus (*special topics.*)
Four times weekly, October 22 to December 21.

Elementary Theory of Equations.
Four times weekly, January 1 to February 15.

Modern Analytic Geometry of Two Dimensions.
Four times weekly, February 15 to April 1.

Analytic Geometry of Three Dimensions.
Four times weekly, April 1 to end of year.

Differential Equations (elective course for undergraduates in their third year.)
Twice weekly, through the year.

ASTRONOMY.

The courses in Astronomy are so arranged as to meet the wants of different classes of students, from those just beginning the study to those already prepared to carry on advanced work. For training students in the use of instruments the University has erected a small observatory and supplied it with the following instruments:

An equatorial telescope of 9½ inches aperture, with clock-work and filar micrometer.

A meridian circle of 3 inches aperture, with circles 2 feet in diameter reading to seconds.

A small meridian transit instrument.

A sidereal clock, chronograph, etc.

A reflecting circle by Pistor and Martins.

An astronomical theodolite, and several other small instruments.

Students are required to make and reduce observations and to keep full records of the same; in fact, so far as possible, to do the routine work that would be required in an observatory.

Dr. CHESSIN offers the following course:

Celestial Mechanics.
Three times weekly, through the year.

This course will deal mainly with the theory of general perturbations, of which the principal methods will be developed with the view of conveying to the student a general and clear idea of the subject without going into details of practical applications. After developing the older methods in celestial mechanics, as full an account as is possible will be given of the more recent researches of Gyldén, Poincaré, and others. The course will also deal with the development of functions in series and the integration of the general differential equations of dynamics.

Dr. POOR offers the following courses:

1. The Theory and Use of Astronomical Instruments.
Three times weekly, first half-year.

This subject includes a general discussion of astronomical instruments, the theory of the achromatic objective, the general laws of telescopic vision, the use of divided circles, the principles of the spectroscope, etc.

2. Advanced Theoretical Astronomy.
Three times weekly, second half-year.

In this course will be discussed the theory of precession and nutation, aberration, and the reduction of star places. The formation and use of star catalogues will also be fully treated of, together with their errors and the corrections necessary to reduce them to a standard system.

3. A General Course in Theoretical and Practical Astronomy.
Twice weekly, through the year.

This course is intended for those commencing the subject, and for those taking Astronomy as a subsidiary subject for the degree of Ph. D. It will embrace the elements of spherical astronomy, the theory and use of astronomical instruments, the use of the ephemeris, elementary gravitational astronomy, the history of astronomy, and the first principles of the method of least squares.

4. Astronomical Computations.

Weekly, through the year.

The students will be exercised in the actual computation of ephemerides, comet orbits, the correction of orbits, etc.

5. Astronomical Seminary.

Weekly, through the year.

6. Practical work with the Instruments.

Daily, through the year.

Dr. POOR offers a course in General Astronomy to undergraduates.

This is an elective course for third-year students. It will embrace an historical sketch of the development of the science, and an outline of the present state of our knowledge of the constitution and motions of the celestial bodies. The use of the principal instruments will be explained, and some practice may be had with the equatorial.

PHYSICS.

(Including Applied Electricity.)

Advanced Courses.

Lectures.

Professor ROWLAND will lecture on—

Thermodynamics, Heat Conduction, and Physical Optics.

Four hours weekly, through the year.

These lectures constitute one-half of a complete course, which extends through two years. In the year 1896–97, the lectures will be on Electricity and Magnetism.

Dr. AMES will direct the *Physical Seminary*, which meets once a week through the year for the consideration of special subjects, and to which only the most advanced students are admitted, and will lecture on—

Applications of Dynamics to Physical Chemistry.

Two hours weekly, first half-year.

Selected Topics in Spectroscopy.

Two hours weekly, second half-year.

These lectures are designed to be introductory to Professor Rowland's course, and students should take them during their first graduate year.

For all the advanced lectures a thorough knowledge of analytic geometry of three dimensions and of differential equations is necessary.

Laboratory Work.

Graduate students are expected to give as much of their time as possible to laboratory work. This consists at first in performing experiments which are designed to familiarize them with laboratory methods and with the use of instruments for exact measurements. When sufficient experience of this kind has been acquired, they undertake, under the guidance of the instructors, some research designed to be of permanent value.

Journal Meetings.

The instructors meet once a week with the advanced students for the reading and discussion of the current physical journals.

Among the journals on which reports are regularly given are the following: The Philosophical Magazine, The American Journal of Science, The Physical Review, The Astrophysical Journal, Wiedemann's Annalen and Beiblätter, Zeitschrift für physikalische Chemie, Journal de Physique, Annales de Chimie et de Physique, Nature, Comptes Rendus, London Electrician, the Proceedings of the Royal Society of London and of many other societies.

Collegiate Courses.

These courses are adapted to undergraduates and to those graduate students who wish to extend their knowledge of Physics but are not prepared for more advanced work.

First Year (Minor Course.)

1. Lectures and recitations on General Physics.

Four hours weekly, through the year. Dr. AMES.

2. Laboratory Work.

Three hours weekly, through the year.

This course does not assume that the student has had any previous acquaintance with physics; but he is supposed to know how to use logarithms and to have had thorough instruction in plane trigonometry.

Second Year (Major Course.)

1. Lectures and recitations on the following subjects:

Mechanics, including some simple problems in the motion of rigid and elastic bodies.

Elementary Thermodynamics.

Electricity and Magnetism.

Geometrical and Physical Optics, based on Heath's Geometrical Optics and Preston's Theory of Light.

Four hours weekly, through the year. Dr. AMES.

2. Laboratory Work.

Five hours weekly, through the year.

This course presupposes at least one year's previous work in physics and an accurate knowledge of analytic geometry of two dimensions and the calculus.

The laboratory work of both courses accompanies the lectures throughout the year and is largely quantitative, being designed to impress the principles of the subject and to impart experimental skill. In the second year, therefore, problems presenting greater difficulties, either experimental or theoretical, are assigned. Written reports of the work are required of all the students.

Applied Electricity.

The work in this course is intended to give the students a thorough theoretical knowledge of the subject, with such examples in electrical practice as will fit them to apply the latest discoveries in electrical science to the more important practical problems of the day. In Applied Electricity especial attention is given to the electrical transmission of energy, electric traction, and alternating current work.

The course includes lectures on theoretical and applied electricity and electrical measurements, with so much of mechanical engineering as seems necessary. An important feature is laboratory work, to which much attention is paid, and original investigation is especially encouraged. The instruction is given by H. A. ROWLAND, Professor of Physics; LOUIS DUNCAN, Associate Professor of Electricity; HERMANN S. HERING, Associate in Electricity; and H. G. GEER, Associate in Mechanical Engineering.

The work extends through two years and is intended principally for graduate students. Those who have taken the Physical-Mathematical or the Physical-Chemical course in this University are especially well prepared, but all students must satisfy the instructors that they are fitted to pursue the course.

Candidates for admission must have completed the major and minor courses of this University (or their equivalents elsewhere) in Physics and Mathematics, the minor course in Chemistry, and the course in Freehand

and Instrumental Drawing; and must be able to read either French or German.

Those who have not had all this preparatory training, must follow the courses in which they are deficient.

A certificate of proficiency is given to those students who complete the prescribed course in a satisfactory manner, and who possess a knowledge of both French and German.

First Year.

Electricity and Magnetism.

Four times weekly, through the year. Professor ROWLAND.

This course is given every other year, and will be taken, according to circumstances, in either the first or the second year.

Applied Electricity.

Three times weekly, through the year. Dr. DUNCAN.

Lectures and examples on so much of the physical and mathematical theory of electricity and magnetism as is considered useful for application.

Electrical Measurements.

Twice weekly, through the year. Mr. HERING.

Lectures and recitations on the general methods of performing experiments and conducting tests, in which the fundamental measurements in electricity and magnetism and tests of electrical machinery are considered.

Electrical Seminary.

Weekly, through the year. Professor ROWLAND, Dr. DUNCAN, Mr. HERING, and Mr. GEER.

At these meetings the students of both classes review current electrical literature and present carefully prepared papers upon special topics in connection with their studies or their laboratory work.

Mechanics of Engineering.

Twice weekly, through the year. Mr. GEER.

Lectures and problems upon the strength of engineering materials, kinematics of machinery, and machine design, with especial reference to structural strength, arrangement, and utility of electrical machinery. This course is correlated by problems at the drawing board during the second and third terms of the year.

Mechanical Drawing.

Six hours weekly, through the year. Mr. GEER.

Machine sketches, precise representation and detail drawing of electrical machinery. Kinematical problems solved graphically and machine parts inserted. Shop drawings of machine details from original designs. Tracing and blue-printing.

Laboratory Work.

Nine hours weekly. Dr. DUNCAN and Mr. HERING.

Exercises are given in fundamental experiments: the measurement of electro-motive force, current, resistance, self and mutual induction, capacity, hysteresis, permeability, etc., tests of batteries, dynamos, motors, incandescent and arc lamps, etc. The work is largely individual, and the character and grade of the work given to the student is determined by his qualifications.

Second Year.

Electricity and Magnetism.

Four times weekly, through the year. Professor ROWLAND.

This course is given every other year and will be taken in either the first or the second year, according to circumstances.

Applied Electricity.

Twice weekly, through the year. Dr. DUNCAN.

Theory and design of dynamos and motors, transmission of energy, electric traction, telephone and telegraph, alternating apparatus, etc.

Electrical Seminary.

Weekly, through the year. Professor ROWLAND, Dr. DUNCAN, Mr. HERING, and Mr. GEER.

Steam and Hydraulic Engineering.

Three times weekly, through the year. Mr. GEER.

Lectures and examples upon steam engines and other heat motors (Fall term); steam boilers and accessories (Winter term); hydraulics, water motors, and pumps (Spring term). Abundant problematic illustrations of the best modern practice in "Central Station" construction are required of the student, in conjunction with the class-room work. Personal inspection and study of large plants in process of erection and of those in operation is urged and afforded the class.

Mechanical Drawing.

Six hours weekly, through the year. Mr. GEER.

Design and arrangement of parts, assembly and detail drawings of special problems as assigned during the first part of the year, and of dynamos and Central Stations, etc., prepared largely from the original designs of the students.

Laboratory Work.

Professor ROWLAND, Dr. DUNCAN, Mr. HERING, and Mr. GEER.

The students are given original problems to work out in the laboratory, and experiments and investigations in alternating currents and transmission plants form an important part of the work. Encouragement will be given for the undertaking of original research.

Some time will be devoted to work in steam engineering, including indicator practice, standardizing apparatus, calorimetry, etc.; and engine and boiler trials and tests of the University power plant will be made.

CHEMISTRY.

The courses in Chemistry are intended to meet the wants (1) of graduate students who make Chemistry their specialty, or who select it as one of their subordinate subjects for the degree of Doctor of Philosophy; and (2) of undergraduate students who study chemistry for general training. The first and second year's courses cover the ground of General Chemistry, as far as it is possible to do so in the time occupied. Together they form the full course designed for undergraduates. Graduates who have not done an equivalent amount of work, will follow such parts of these courses as may seem desirable.

The Chemical Laboratory is well equipped, and will conveniently accommodate about two hundred students.

Advanced Work.

Laboratory.

Under the direction of Professors REMSEN and MORSE. *Daily, except Saturday, from 9 a. m. to 5 p. m.*

The work will consist in a thorough study of analytical methods, in making typical preparations especially of compounds of carbon, and in carrying on investigations.

Lectures.

(*a*) Selected Topics in the Chemistry of the Compounds of Carbon, by Professor REMSEN. *Twice weekly, until Christmas.*

(*b*) Compounds of Carbon, by Professor REMSEN. *Five times weekly, from January 1 to the end of the year.*

(*c*) Analytical Methods, by Professor MORSE. *Once weekly, through the year.*

(*d*) The Principles of Physical Chemistry, by Dr. RANDALL. *Twice weekly, until Christmas.*

(*e*) Special Topics, under the direction of the Professor of Chemistry, by advanced students. *Ten to twelve lectures, second half-year.*

This work, while serving to familiarize students with chemical literature, is intended to aid them in acquiring the art of presenting subjects in the form of lectures before audiences. All those who intend to become teachers of Chemistry are expected to take active part in the work.

(*f*) *Journal Meetings.*—The instructors and advanced students will meet weekly, on Saturdays from 9 to 10.30 a. m., and at such other hours as may be appointed, for the purpose of hearing reports on the principal articles contained in the journals of Chemistry.

The reports are furnished in turn by all who attend the meetings. The journals read and regularly reported on are: Annalen der Chemie, Berichte der deutschen chemischen Gesellschaft, Journal of the Chemical Society (London), Journal für praktische Chemie, Zeitschrift für analytische Chemie, Zeitschrift für physikalische Chemie, American Chemical Journal, Journal of the Society of Chemical Industry, Bulletin de la Société chimique, Annales de Chimie et de Physique, Zeitschrift für anorganische Chemie, and occasionally others.

Introductory and Collegiate Courses.

First Year (Minor) Course.

(*a*) Introduction to General Chemistry.

Lectures and examinations four times weekly, through the year, by Professor Remsen, Professor Renouf, Dr. Randall, and Dr. Gilpin.

(*b*) Laboratory Work.

Five to six hours weekly, through the year, under the direction of Professor Renouf, Dr. Randall, and Dr. Gilpin.

Second Year (Major) Course.

(*a*) Chemistry of the Compounds of Carbon.

Four times weekly, second half-year, by Professor Morse.

(*b*) Advanced Inorganic Chemistry.

Four times weekly, first half-year, by Professor Renouf and Dr. Randall.

(*c*) Laboratory Work.

Five to six hours weekly, through the year, under the direction of Professor Renouf.

GEOLOGY.

The instruction in Geology will be under the guidance of Dr. William B. Clark, Professor of Organic Geology, assisted by Dr. Edward B. Mathews, Associate in Mineralogy and Petrography. Prolonged courses of lectures will be given by Mr. G. K. Gilbert, of the United States Geological Survey, upon Physiographic Geology, and by Mr. Bailey Willis, also of the United States Geological Survey, upon Stratigraphic and Structural Geology.

The courses in Geology which are offered both to graduate and undergraduate students consist of lectures, laboratory and field work, and conferences upon topics of current literature. Great importance is attached to laboratory training as a part of the geological course, and facilities are given for daily work from 9 a. m. to 5 p. m.

Commodious rooms have been recently fitted up in Hopkins Hall for the uses of the geological department, and there will be found the books, apparatus, and collections relating to Geology.

Lecture Courses.

1. General Geology, by Professor Clark and Dr. Mathews. *Four times weekly.*

2. Palæontology, by Professor Clark. *Three times weekly.*

This course is divided into two portions, given in alternate years: (*a*) Invertebrate Palæontology; (*b*) Vertebrate Palæontology and Palæobotany. During the coming session the lectures will be confined to Invertebrate Palæontology.

3. Historical Geology, by Professor Clark. *Three times weekly.*

4. Mineralogy, by Dr. Mathews. *Four times weekly.*

5. Petrography, by Dr. Mathews. *Three times weekly.*

This course is divided into two parts, given in alternate years: (*a*) Rock-forming Minerals; (*b*) Rock-classification. During the coming session lectures will be given upon Rock-forming Minerals.

6. Physiographic Geology, by Mr. Gilbert. *Twice weekly, for three months.*

The subject of the course is the origin of the forms of the earth's surface, and its treatment will include the systematic presentation of a large body of the principles of dynamic geology, especially those which apply to the sculpture of the land by the various processes of erosion. During the coming session this course will be given in January, February, and March.

7. Stratigraphic and Structural Geology, by Mr. Willis. *Twice weekly, for three months.*

This course is a sequel to that by Mr. Gilbert. It will consist of a description of the processes which result in the formation and upheaval of sedimentary rocks. The mechanics of rock folding and thrusting will be illustrated both by actual sections and by experimental results. The whole course will lead to a discussion of the principles which should govern the interpretation of the sedimentary record. Lectures will be given during January, February, and March.

Laboratory Work.

Laboratory courses are arranged to accompany the lectures, while advanced or special students will be given the opportunity to carry on fuller investigations upon either described or new materials.

Field Work.

The area of the State of Maryland includes, notwithstanding its comparatively small size, a remarkably perfect sequence of all the geological formations. The most ancient rocks which make up the earth's crust, as well as those still in the process of deposition, are here found, while between these wide limits there is hardly an important geological epoch which is not represented. As a result, most excellent facilities are afforded for a study of the various geological horizons.

During the autumn and spring, excursions are made upon Saturdays into the surrounding country, the crystalline areas and the various Cretaceous and Tertiary formations being readily accessible. More extensive excursions are made from time to time into the early Mesozoic and Palæozoic areas of the western portion of the State and into the highly fossiliferous Tertiary region of the lower Chesapeake Bay.

Conferences and Student Lectures.

In order that the advanced students may be kept in touch with the most recent investigations in the science, conferences are held at which the leading journals in geology are reviewed by the students under the direction of the instructors. The conferences take place bi-weekly.

That the experience necessary for the successful preparation and delivery of class-room lectures may be gained, a course upon some phase of geology is arranged for, a special topic being assigned to each student. The lectures of this course take place bi-weekly, alternating with the conferences.

Library and Collections.

The Library of the department contains a good representation of the leading journals and works of reference upon geological subjects. It is greatly enriched by the libraries of the late Professor George H. Williams and Professor H. Carvill Lewis. Extensive series of topographical and geological maps likewise form a portion of the library, and these are constantly increasing in number.

In addition to libraries belonging to the University, the Peabody Library, rich in geological works, is available for the use of students, while books not obtainable in Baltimore may be readily consulted in the libraries of Washington.

The collections of the department consist primarily of a large amount of important material brought together from Maryland and adjacent States. It represents all the horizons of the State, being especially rich in crystalline rocks and in Cretaceous and Tertiary fossils. Some of this material has been already described, while much awaits further study.

Important collections are the following: Williams collection of rocks and minerals, Krantz collection of European fossils, Hill collection of Texas rocks and fossils, Allen collection of minerals, Stürtz collection of European rocks, Lehman collection of Saxon rocks, Lewis collection of rocks and thin sections.

BIOLOGY.

The courses in Biology are designed (1) for students who wish to make Zoölogy or Animal Physiology a subject of advanced study and research, or the principal or a subordinate subject for the degree of Doctor of Philosophy; (2) for graduates in medicine who desire a laboratory course in Physiology; (3) for undergraduates who desire some knowledge of the biological sciences as part of a liberal education; and (4) for undergraduates who desire to prepare themselves for the study of medicine.

The biological laboratory will be open daily during the session, except on Saturdays, from 9 a. m. to 5 p. m. The work goes forward under the direction of Professors Brooks and Howell, and Doctors Andrews, Dreyer, and Barton.

The marine laboratory is open for part of the year at some place on the sea-shore selected on account of its natural advantages for out-of-door study of animal life, and for the collection of material for original research in zoölogy, comparative anatomy, and embryology.

Graduate Courses.

For advanced students:

1. Professor Brooks will conduct the following courses:

Principles of Zoölogy.
Three times weekly, from January 1 to April 1.

Advanced lectures in Zoölogy, by instructors and fellows.
Weekly, from January 1 to April 1.

Marine Zoölogy.
Daily, from April 1 to July 1.

Zoölogical Seminary.
Weekly, from the beginning of the session until April 1.

Evening readings in Zoölogy.
Weekly, through the winter.

2. Professor Howell will conduct the following courses:

Animal Physiology.
Four times weekly, throughout the year, with twelve weeks of laboratory work, five hours a week.

This course is designed for the students in the medical school, but it, or an equivalent, will be required of students taking graduate work in animal physiology as a subsidiary subject for the Ph. D. degree.

Physiological Seminary.
Weekly, throughout the year.

Physiological Journal Club.
Weekly, throughout the year, for the discussion of current journals.

Advanced laboratory work in Physiology (methods of demonstration and research).

Arranged for those who have completed the elementary course in animal physiology. The work is done individually and not in class.

3. Botany.

Herbaria.

Captain John Donnell Smith, of Baltimore, has kindly consented to allow students to avail themselves of the opportunities offered in his private herbarium, which includes some 78,000 sheets of specimens from all parts of the world, and which is especially rich in its representation of the Flora of the United States and of the American tropics. He has also offered to special students the privilege of consulting his extensive botanical library.

Students of Botany have access also to the Schimper collection of European phanerogams, the Fitzgerald collection of mosses, the local collections of the Baltimore Naturalists' Field Club, and to Dr. Lotsy's private collections of European and African plants.

Journal Club.

This club, composed of the instructors and advanced students, will meet weekly for the reading and discussion of recent biological publications.

Library Facilities.

The laboratory contains a library supplied with standard biological works and complete sets of the more important journals.

The general library of the University receives all the chief journals of general science, and the transactions of the leading learned societies of the world.

The library of the Peabody Institute, within five minutes' walk of the University, contains complete sets of many of the chief biological journals, of the proceedings of learned societies, and other works of reference.

In the libraries of the Medical and Chirurgical Faculty of Maryland and the Johns Hopkins Hospital a large number of medical periodicals are accessible to members of the University.

Publications.

The University Circulars provide for the prompt publication of abstracts and preliminary notices of researches, and one number of the Circulars is, each spring, devoted to notes from the laboratory.

The Studies from the Biological Laboratory have provided, in the past, for the publication of researches which have not required elaborate illustrations.

From time to time more extensive and elaborate memoirs have been issued by the University Press in a series of illustrated quarto Morphological Monographs.

Collegiate Instruction.

The regular undergraduate instruction in normal biology extends over two years. The first year constitutes a *minor course* and may be taken separately. It must be taken by those who wish to enter the medical school.

Special students, who are not graduates or matriculates, may enter the courses for undergraduates on giving satisfactory evidence of fitness.

First Year or Minor Course. (Biology A.)

This introductory course in General Biology consists of five hours laboratory work and four lectures or exercises weekly. It will be conducted by Dr. Andrews. The instruction in Botany is given by Dr. Barton in April and May; it is open to any first-year student as a part of the course in freehand drawing.

The subjects studied in the laboratory are: the life phenomena of certain animals and plants; the human skeleton; the elements of the embryology of the frog and the fowl; and the elements of botany.

Attention is directed to the broad characteristic phenomena of life and living things, rather than to the minutiæ of descriptive botany or zoölogy, or to the characters of orders, genera, and species. In the laboratory the student learns how to observe, how to verify and describe what he observes, how to dissect, and how to use a microscope; he examines selected vegetable and animal types from unicellular organisms, such as the yeast-plant and Amœba, to the fern and the flowering plant on one side and to the crayfish and a mammal on the other. In the lecture room attention is mainly given to the fundamental biological facts and laws which the particular plant or animal under consideration is fitted to illustrate, the object being rather to give the student an idea of what is meant by the terms living thing, plant, animal, tissue-differentiation, life-history, organ, function, natural classification, evolution, development, etc., than to teach him the elements of Botany and Zoölogy as frequently understood.

Second Year or Major Course. (Biology B.)

The work of the second year consists of three practically separate courses planned as an introduction to the principles and methods of physiology, zoölogy, and embryology.

1. Animal Physiology and Histology.
   Four lectures weekly and five hours of laboratory work, from January 1 to April 1. Dr. Dreyer.

This course is intended to give the outlines of general animal physiology and histology. Attention is directed first to the structure and fundamental physiological properties of animal tissues. This is followed by a brief study of organs and physiological mechanisms, mainly as they occur in the mammalia, but with more or less extended references to similar organs in other animals, invertebrate as well as vertebrate.

2. Elements of Zoölogy.
   Four lectures weekly and five hours of laboratory work, until January 1. Professor Brooks.
3. Elements of Comparative Embryology.
   Four lectures weekly and five hours of laboratory work, from April 1 to the end of the session. Dr. Andrews.

GREEK.

Greek Seminary.

Professor Gildersleeve will conduct the Greek Seminary, the plan of which is based on the continuous study of some leading author or some special department of literature.

The Seminary consists of the director, fellows and scholars, and such advanced students as shall satisfy the director of their fitness for an active participation in the work by an essay, a critical exercise, or some similar test of attainments and capacity. All graduate students, however, may have the privilege of attending the course.

During the next academic year the study of the *Greek Historians* will constitute the chief occupation of the members and *Thukydides* will be the centre of the work. There will be two meetings a week during the entire session. Especial attention will be paid to the development of historical style and method.

In connection with the Seminary there will be held a series of conferences on *Greek Historiography.*

The students should possess Herodotos, Thukydides, Xenophon, Polybios, Dionysios of Halikarnassos (rhetorical works), and Schäfer's Quellenkunde der griechischen Geschichte.

Advanced and Graduate Courses.

1. Professor Gildersleeve will also conduct a course of *Practical Exercises in Greek*, consisting chiefly in extemporaneous translation from Greek into English and English into Greek, two meetings a week from the beginning of the session to the first of January.
2. He will also lecture on *Greek Syntax* once a week throughout the session, in continuation of the course on *Greek Syntax in its relation to style.* The special subject will be *The Syntax of the Noun.*
3. The subject of *Hermeneutics and Criticism* will be taken up in a series of conferences (Blass being the text-book).
4. Notice of other courses is reserved.

Undergraduate Courses.

Associate Professor Spieker will conduct the following courses:

1. Isokrates, *Panegyricus.*
   Three times weekly, first half-year.
   Private Reading: Xenophon, *Hellenica I.*
2. Plato, *Euthyphro;* Euripides (one play).
   Three times weekly, second half-year.
   Private Reading: Plutarch, *Themistokles.*
3. Sophokles (one play); Selections from the elegiac, lyric, and iambic poets.
   Three times weekly, first half-year.
   Private Reading: Aischylos (one play).
4. Demosthenes.
   Three times weekly, second half-year.
   Private Reading: Aristophanes (one play).
5. Elective Course: Thukydides *VII.*
   Twice weekly, first half-year.
6. Prose Composition.
   Weekly exercises in connection with courses 1, 2, 3, 4.

For Candidates for Matriculation.

Homer, *Iliad* (one book); Herodotus (one book); Sight Reading; Prose Composition.
Three times weekly. Mr. Wilson.

LATIN.

Latin Seminary.

Professor Warren will conduct the Latin Seminary. The Latin Historians, more especially Livy and Tacitus, will form the centre of work during the next academic year. There will be two meetings a week throughout the year, devoted to the critical interpretation of the authors above named, to various

auxiliary studies, and to the presentation of papers prepared by members of the Seminary. More particular attention will be paid to Livy in the first half of the year and to Tacitus in the latter half.

Students are advised to read in advance as much as possible of Livy and Tacitus, and to provide themselves with complete texts of Cæsar, Sallust, Curtius, Tacitus (Halm, Teubner, Leipzig), Livy (Weissenborn and M. Mueller, Teubner, Leipzig) and the Historicorum Romanorum Fragmenta (edited by Hermann Peter, Teubner, Leipzig, 1883).

Advanced and Graduate Courses.

1. During the first half-year, Professor Warren will give a course of lectures on the Roman Historians, beginning with the earliest period, once a week.

2. Throughout the year he will lecture on Historical Latin Grammar once a week.

3. During the first half-year, Associate Professor Smith will give a course of weekly lectures on the Roman Elegy and Epigram.

4. During the second half-year, Professor Warren will conduct a course of weekly exercises in the interpretation of inscriptions, using as a basis Rushforth's Latin Historical Inscriptions (Oxford, 1893).

5. A Journal Club will meet regularly to report on current philological periodicals containing articles of interest to Latinists.

6. Associate Professor Smith will conduct a course of practical exercises in Latin, one meeting a week during the second half-year, consisting mainly in translation and dictation from Latin into English and from English into Latin.

The schedule given above is subject to additions and modifications.

Undergraduate Courses.

1. Livy (two books).
   Three times weekly, first half-year. Dr. SMITH.
   Private Reading: Cæsar, *Bellum Civile, book i;* Cicero, *De Senectute.*

2. Horace (selections).
   Three times weekly, second half-year. Dr. SMITH.
   Private Reading: Horace, *Ars Poetica;* Selections from Phaedrus.

3. Pliny's Letters; Juvenal.
   Three times weekly, first half-year. Dr. SMITH.
   Private Reading: Cicero's Letters.

4. Terence, *Andria;* Plautus, *Captivi.*
   Three times weekly, second half-year. Professsor WARREN.
   Private Reading: Plautus, *Miles Gloriosus.*

5. Prose Composition.
   Weekly exercises in connection with each of the above courses.

6. Lucretius: Elective Course.
   Twice weekly, second half-year. Dr. SMITH.

FOR CANDIDATES FOR MATRICULATION.

Cicero, *De Amicitia;* Sallust, *Bellum Jugurthinum;* Ovid (selections); Vergil, *Eclogues;* Sight Reading; Prose Composition.
Three times weekly. Mr. WILSON.

ORIENTAL SEMINARY.

1. Introduction to the Old Testament.
   Professor HAUPT and Dr. JOHNSTON. *Thursday, 5 p. m., during the second half-year.*

2. Elementary Hebrew.
   Professor HAUPT and Dr. JOHNSTON. *Two hours weekly, through the year.*

3. Critical Interpretation of Selected Psalms.
   Professor HAUPT. *Monday, 3 p. m.*

4. Exercises in Reading Hebrew at sight.
   Dr. JOHNSTON. *Weekly, through the year.*

5. Hebrew Prose Composition.
   Professor HAUPT. *Monday, 5 p. m.*

6. Hebrew Conversation.
   Mr. LEVIAS.

7. Mishnic Hebrew (*Aboda Zara*, ed. Strack.)
   Mr. LEVIAS.

8. Mechilta.
   Mr. LEVIAS.

9. Biblical Aramaic Grammar and Interpretation of the Books of Daniel and Ezra.
   Professor HAUPT. *Monday, 4 p. m.*

10. Syriac Grammar and Reading of the Syriac Version of the New Testament.
    Professor HAUPT. *Tuesday, 4 p. m.*

11. Ethiopic (Dillmann's Chrestomathy.)
    Professor HAUPT. *Tuesday, 3 p. m.*

12. Arabic for beginners.
    Dr. JOHNSTON. *Two hours weekly, through the year.*

13. Exercises in Reading Arabic at sight.
    Dr. JOHNSTON.

14. Interpretation of Selected Suras of the Koran.
    Professor HAUPT. *Tuesday, 5 p. m.*

15. Arabic Prose Composition.
    Professor HAUPT. *Monday, 5.30 p. m.*

16. Assyrian for beginners.
    Dr. JOHNSTON. *Two hours weekly, through the year.*

17. Cursory Reading of Selected Cuneiform Texts.
    Dr. JOHNSTON.

18. Assyrian Seminary (Haupt's Nimrod Epic and bilingual hymns and psalms.)
    Professor HAUPT. *Tuesday, 7.30–9.30 p. m.*

19. History of the Ancient East.
    Dr. JOHNSTON. *Weekly* (Assyria and Babylonia *during the first half-year, and* Persia and Egypt *during the second half-year.*)

SANSKRIT AND COMPARATIVE PHILOLOGY.

The following courses, offered by Professor BLOOMFIELD, may be stated under two heads:

A. Indo-Iranian Languages.

1. Vedic Seminary: Hymns of the Rig-Veda in the light of general Vedic criticism.
   Weekly (1½ hours), through the year.

2. Introduction to the language and the literature of the Zend-Avesta.
   Weekly, through the year.

3. Readings in the Kathasaritsāgara and Manu. (Second year's course in classical Sanskrit.)

Twice weekly, first half-year.

4. The drama Çakuntala with an introduction to the Prākrit dialect. (Second year's course in classical Sanskrit.)

Weekly, second half-year.

5. Introduction to the Elements of Vedic Philology.

Weekly, second half-year.

6. Elementary course in Sanskrit: grammar; prose writing; interpretation of an easy text.

Twice weekly, through the year.

B. Linguistic Science and Comparative Grammar of the Indo-European Languages.

7. The Elements of Linguistic Science, with an introductory account of the Ethnology of the Indo-European peoples.

Weekly, through the year.

8. Comparative Grammar of Greek, Latin, German, and Sanskrit: The History of Vocalism.

Weekly, through the year.

No knowledge of Sanskrit is required for either of the two courses under B. The first sketches briefly the history of the Science of Language; presents a concise account of the ethnological history of the Indo-European peoples; deals with the fundamental questions of change in language; and finally treats of the origin of language. It is designed to outline the general principles in the scientific study of language. The second course is intended as an introduction into the most elementary methods and results of the comparative grammar of the more prominent Indo-European languages.

ENGLISH.

A.

Professor Bright will conduct the following courses in English Philology:

I.

English Seminary.

Graduate students are admitted to the Seminary as soon as they have satisfied initial requirements for independent research. The work of the Seminary is directed towards a two-fold end: the thorough study of some literary period, or of some department of literature extending through successive periods, or of the works of a significant author or group of authors; and training in scholarly methods of dealing with philological and literary subjects.

The following subjects will be studied: (*a*) at the beginning of the year (*October–December*), the English poets of the "Metaphysical School;" (*b*) the *Beowulf* (*January–March*); (*c*) a group of Middle English Romances (*April, May*).

The meetings of the Seminary will occupy four hours a week. *Tuesdays and Thursdays* 3–5 *p. m.*

II.

Lectures on English Philology (Phonology, Inflection, and Syntax). *Wednesdays*, 4 *p. m.*

III.

A class in the interpretation of Anglo-Saxon and Middle English texts. *Thursdays*, 12 *m.*

This class will begin with the Middle English *Ipomedon*. Students will require *Ipomedon in drei englischen Bearbeitungen*, hrsg. von Eugen Kölbing, Breslau, 1889; and *Hue de Rotelande's Ipomedon*, hrsg. von E. Kölbing und E. Koschwitz. Breslau, 1889.

IV.

Lectures and Conferences on selected topics in Literature, Philology, and Phonetics. *Tuesdays*, 12 *m.*

V.

The English Journal Club (*fortnightly, two hours*), for reports on the current journals, reviews of new books, and the presentation and discussion of original papers on philological and literary subjects.

VI.

An introductory course in Anglo-Saxon, with Bright's Anglo-Saxon Reader as the text-book. *Mondays and Wednesdays*, 12 *m.*

B.

Professor Browne will give the following courses in English Literature:

VII.

A general course covering the whole field, from the 7th to the 19th century. The study, of course, is synoptical; but emphasis is laid upon the chief writers and most important periods. Morley's *Manual* (Tyler's edition) is used as a text-book. *Wednesdays and Thursdays*, 1 *p. m.*

VIII.

A course in the writers of the 12th, 13th, and 14th centuries (from the Peterborough Chronicle to Chaucer). The texts are read from Morris and Skeat's *Specimens*, the students beginning with the easier and proceeding to the more difficult. In addition to the knowledge thus acquired of an interesting and formative period of our literature, this introduction to the early forms of the language will be found a helpful prodromus to the study of Anglo-Saxon. *Mondays and Tuesdays*, 1 *p. m.*

IX.

A course in the writers of the Elizabethan period. The origin and development of the English drama will be traced from its earliest recorded beginnings down to Shakespeare, the representative of its highest perfection, and in its decadence in the later Jacobean dramatists. *Tuesdays and Fridays*, 12 *m., first half-year.*

X.

A course in the literature of the 14th century, illustrating the Renaissance influence on letters, and the movement towards reformation in religious and political matters, which find their most marked expression, respectively, in Chaucer, Wyclif, and Langland. *Tuesdays and Fridays*, 12 *m., second half-year.*

XI.

The Early Scottish Poetry from Barbour (A. D. 1350) to Lyndsay (A. D. 1550) will be studied by the aid of a chrestomathy especially prepared for this class. A course of historical and critical lectures will be given concurrently with the readings.

XII.

A course of lectures, for advanced students, on the Scottish literature from Lyndsay to Burns. *Wednesdays*, 12 *m.*

C.

Professor Greene will give the following courses in Rhetoric and in English Literature:

XIII.

Rhetoric and English Composition. Theory, based upon text-books, lectures, and discussions; critical study of prose writers;

frequent practice in writing. *Mondays, Tuesdays, and Wednesdays*, 12 *m.*

XIV.

English Literature. Outline history, with special study of the more important writers. *Mondays*, 9 *a. m.*, *Tuesdays*, 10 *a. m.*, *Wednesdays*, 11 *a. m.*

XV.

Special study of the literature of the eighteenth and nineteenth centuries. *Twice weekly.*

NOTE.—Courses I–V and XII are for graduate students.

Courses VII and VIII constitute the "English Minor," and VI, IX, X, and XI, the "English Major" of Group VII.

Course XIII is prescribed for all college students during their first year; XIV is prescribed for the second year; and XV is elective in the third year.

GERMAN.

German Seminary.

The German Seminary will be conducted by Professor WOOD. During the first half-year the period in German Literature from Goethe's Italian journey (1786) to the death of Schiller (1805) will be studied. The subjects to receive special attention will be: Goethe's period of pronounced classical sympathies, Schiller's influence upon Goethe and their contemporaries in the direction of subjectivism in poetry, and Goethe's subsequent return to the national point of view in later works. The subject for the second half-year will be the Middle High German Lyric. The poems of Walther von der Vogelweide will be studied. The Seminary will meet three times weekly, through the year.

Students are requested to procure Wilmanns, *Gedichte Walthers von der Vagelweide*, 2. Ausg. (Germanistische Handbibliothek I.) Halle, 1883; Wilmanns, *Leben und Dichten Walthers*, Bonn, 1882; Burdach, *Reinmar der Alte und Walther von der Vogelweide*, Leipzig, 1880.

The Germanic Society, which is composed of the Director of the Seminary, the Instructors and Graduate Students in German, will meet fortnightly in an evening session. The members present, in turn, papers upon subjects connected with the work for the year or assigned for investigation.

Advanced and Graduate Courses.

Professor WOOD will conduct the following courses:

1. Gothic. *Twice weekly, through the year.*

Braune, *Gotische Grammatik*, 3. Auflage, Halle, 1887; G. H. Balg, *The First Germanic Bible*, 1891; F. Kluge, *Etymologisches Wörterbuch der deutschen Sprache*, 5. Auflage, Strassburg, 1894.

2. Old Norse. *Weekly, through the year.*

Eddalieder I., hrsg. F. Jónsson, Halle, 1888; *Die Lieder der Edda*, hrsg. B. Sijmons, Halle, 1888; H. Gering, *Glossar zu den Liedern der Edda*. Paderborn, 1887.

3. The Swabian and Austrian Poets. *Weekly, through the year.*

The period from Uhland to Mörike will be considered in its chief representatives. Particular attention will be given to the relation of the Swabians to Young Germany and Heine. Among the Austrians, Grillparzer, Lenau, and Anastasius Grün will be specially studied.

Dr. B. J. VOS, Associate in German, will give the following courses:

1. Middle High German. *Twice weekly, first half-year.*

Paul, *Mittelhochdeutsche Grammatik*, 4. Auflage, Halle, 1894. *Mariz von Craon*, hrsg. E. Schröder, Berlin, 1894. F. Vogt, *Mittelhachdeutsche Literatur* (Paul's Grundriss, II. Bd. 1. Abteilung, 1893.)

2. Early New High German Prose. *Weekly, through the year.*

Class readings illustrating the formative period of German prose style. Selections will be made from *Neudrucke deutscher Litteraturwerke des XVI. und XVII. Jahrhunderts*, Halle.

Undergraduate Courses.

Major Course.

1. Drama. *Twice weekly.*

Goethe, *Faust.* Professor WOOD. Lessing, *Nathan der Weise.* Dr. VOS.

2. History of German Literature: Readings.

W. Scherer, *History of German Literature*, 2 vols., New York, 1886. F. Max Müller, *The German Classics*, Vol. II., New York, 1886. *Weekly.* Dr. VOS.

3. Prose Composition.

C. A. Buchheim, *Materials for German Prose Composition*, Parts I. and II., London, 1894. Wilmanns, *Deutsche Schulgrammatik*, 2. Teil. *Weekly.*

4. Private Readings.

Minor Course A.

1. Classics. *Twice weekly.* Dr. VOS.

Goethe, *Hermann und Dorothea;* Schiller, *Maria Stuart.*

2. Prose Readings. *Weekly.* Dr. VOS.

Chamisso, *Peter Schlemihl;* Seidel, *Leberecht Hühnchen.*

3. Prose Composition. *Weekly.* Professor WOOD.

4. Private Readings.

Gutzkow, *Zopf und Schwert.*

Minor Course B.

Class Work. *Four times weekly.*

Otis, *Elementary German;* von Moser, *Der Bibliothekar;* W. H. Riehl, *Culturgeschichtliche Novellen;* Goethe, *Egmont;* Prose Composition, with Whitney's *Grammar.*

Elementary German. *Three times weekly.* Dr. VOS.

Thomas, *Practical German Grammar*, New York (Holt & Co.); Buchheim, *German Reader*, Part I; Fouqué, *Undine* (von Jagemann).

This course is intended for candidates for matriculation who offer Greek.

Supplementary Courses.

Elective Course. *Twice weekly.*

Goethe, *Aus Dichtung und Wahrheit; Deutsche Gedichte*, ed. von Klenze, New York (Holt & Co.).

This course is intended for students who have completed the equivalent of a minor in German.

German Conversation. *Weekly.*

Meissner's *German Conversation.*

Special Courses.

Courses 1 and 2 are open to graduate students who already possess an elementary knowledge of German and wish to acquire greater fluency in reading. The first is intended for students in Languages, History, and Economics; the second for students in the Natural Sciences. Successful completion of either course is accepted as an equivalent of the reading knowledge of German required of candidates for the degree of Doctor of Philosophy.

1. Historical German. *Twice weekly.*

Freytag, *Aus neuer Zeit (die Stillen im Lande)*; Herman Grimm, *Albrecht Dürer*, 2. *Auflage*. Berlin, 1873.

2. Scientific German. *Twice weekly.*

Dippold, *Scientific German Reader*, Boston, 1895; von Helmholtz, *Über Goethe's Ahnungen naturwissentschaftlicher Erkenntnisse*, Berlin, 1893.

3. Oral Exercises in German. *Twice weekly.*

This course is intended especially for students in the departments of modern languages who lack an extended vocabulary and sufficient familiarity with written and spoken German. A thorough knowledge of the elements is presupposed.

ROMANCE LANGUAGES.

Advanced Courses.

I. With second and third year students:

Professor Elliott.

(*a*). Seminary. *Twice weekly.*
The Fables of Marie de France; Work on Manuscripts.

(*b*). French Dialects. *Weekly.*

(*c*). Lectures on Dante. *Weekly.*

(*d*). Romance Club. *Weekly.*

Dr. Menger.

(*e*). Origins of Italian Literature. *Weekly.*
Bartoli, *I primi due Secoli della letteratura italiana*; Gaspary, *Storia della letteratura italiana.*

Dr. Marden.

(*f*). Spanish Philology. *Twice weekly.*
Gröber, *Grundriss der Romanischen Philologie, Vol. I.*; Keller, *Altspanisches Lesebuch.*

Dr. George C. Keidel.

(*g*). Carlovingian Epic.
G. Paris, *Litt. Franç. au Moyen Age* (2d. ed.); L. Gautier, *Les Épopées Françaises*, 4 vols.; P. Rajna, *Origini dell' Epopea Francese*; K. Nyrop, *Storia dell' Epopea Francese.* (Ital. trans.) *Weekly.*

(*h*). Versification.
A. Tobler, *Le Vers Français* (French trans.); L. Quicherat, *Traité de Versification Française. Weekly.*

Professor F. M. Warren.

(*i*). The Arthurian Cycle. Twenty lectures in the month of February, 1896.

By lecturers to be announced later.

(*j*). Lectures on a subject of Modern French literature.

(*k*). Lectures on Contemporary French literature.

Dr. De Haan.

(*l*). Provençal. *Weekly.*
Bartsch, *Chrestomathie Provençale.*

II. With first year students:

Professor Elliott.

(*a*). Popular Latin. *Weekly.*

Professor Rambeau.

(*b*). Phonetics and French pronunciation, with practical exercises. Especially adapted to the needs of teachers. *Weekly, second half-year.*

Dr. Menger.

(*c*). Old French Philology. *Three times weekly.*
Schwan, *Grammatik des Altfranzösischen*; Suchier, *Le Français et le Provençal, Altfranzösische Grammatik*; Darmesteter, *Grammaire historique de la langue française.*

(*d*). French Physiological Phonetics. *Weekly.*
Passy, *Étude sur les Changements Phonétiques*; Beyer, *Französische Phonetik*; Vietor, *Elemente der Phonetik* (1894); Sweet, *Primer of Phonetics.*

Dr. De Haan.

(*e*). Old French Readings. *Twice weekly.*
Bartsch et Horning, *La Langue et la Littérature Françaises*; Paris, *Extraits de la chanson de Roland* (1893); Koschwitz, *Voyage de Charlemagne*; Suchier, *Aucassin et Nicolete*; Warnke, *Die Lais der Marie de France*; Foerster, *Cligès*; Foerster, *Yvain.*

(*f*). Lectures on Nineteenth Century Spanish Literature. *Weekly.*

(*g*). Lectures on the Spanish Drama before the time of Lope de Vega.

Undergraduate Courses.

Dr. Rambeau.

French: *Second Year (Major) Course.**

1. Outline of the History of French Literature from the beginnings to the XIXth century,—especially the XVIIth century.
Rapid reading of Corneille, Racine, and, especially, Molière. *Twice weekly.*

2. The Romantic Movement.
Victor Hugo, *Notre-Dame de Paris, Ruy Blas*; Modern Lyrics: Béranger Lamartine, Victor Hugo, Alfred de Musset, and other poets. *Weekly.*
Private reading to be announced later.

3. Prose Composition.
Study of idioms and original essays with reference to subjects and authors read in the class. *Weekly.*

French: *First Year (Minor) Course:* Class A.*

1. Short outline of the History of French Literature (XVII–XIX centuries), and reading of Contes, Novels, and Dramas.
Contes de Dandet, ed. Cameron; Mérimée, *Colomba*; Molière, *L'Avare*; Hugo, *Hernani. Twice weekly.*

2. Modern French Comedy.
Labiche, *La Poudre aux yeux*; Augier and Sandeau, *Le Gendre de M. Poirier*; Sandeau, *Mademoiselle de la Seiglière. Weekly.*
Private Reading to be announced later.

3. Prose Composition and Syntax.
Whitney's Grammar, Part II, and Exercises based on *Le Siège de Berlin*, ed. Grandgent. *Weekly.*

Dr. Marden.

French: *First Year (Minor) Course: Class B.*

For undergraduates who have matriculated in Greek, and for graduates beginning French. *Four hours weekly.*
Whitney's *Brief French Grammar*; Drill in Grammar and Composition; Grandgent's Exercises based on Super's *French Reader*; Super's *French Reader*; De Vigny, *Le cachet rouge*; Mérimée, *Colomba*; Augier, *Le Gendre de M. Poirier.*

*The two courses (Minor A and Major) comprise exercises in French pronunciation, recitation, and conversation, and oral and written reports on subjects connected with the class-work and private reading.

Dr. Rambeau.

Italian. *Four times weekly.*
Grandgent's Italian Grammar and Composition.
Fornaciari, *Sintassi Italiana*; Fenini, *Letteratura Italiana* (Hoepli); Guarnerio, *Manuale di versificazione italiana.*
De Amicis, *Novelle*; Verga, *Vita dei Campi*; Capuana, *Homo!*; Serao, *All'erta, sentinella!*; Carducci, *Terze Odi Barbare.*
Toward the end of the second term a play of Maffei and of Alfieri, and selections from Ariosto's *Orlando Furioso* and Dante's *Divina Commedia* will be read.

Dr. MENGER.

Italian: Elective Course. *Twice weekly.*

Del Testa, *L'Oro e l'Orpello;* De Amicis, *Alberto, Camilla;* Farina, *Fra le Corde d'un Contrabbasso;* Barrili, *La Donna di Picche;* Verga, *Cavalleria Rusticana;* Capuana, *Homo.*

Dr. DE HAAN.

Spanish. *Four times weekly.*

Knapp's Grammar.

Reading of Quintana, *La vida del Gran Capitan;* Caballero, *La Familia de Alvareda;* Lazarillo de Tormes; Becquer, *Obras,* volume 2; Alarcón, *Sombrero de tres picos;* Hartzenbusch, *Amantes de Teruel;* Campoamor, *Pequeños poemas;* Lope de Vega, *La esclava de su galán;* Calderon, *El Alcalde de Zalamea.*

French: For candidates for matriculation who offer Greek. *Three times weekly.*

Grandgent's *Short Grammar,* and *Exercises* based on Super's *French Reader;* Super's *French Reader;* De Vigny, *La Canne de Jonc* (ed. Spiers); Fontaine, *Historiettes Modernes, Part II.*

HISTORY, POLITICS, AND ECONOMICS.

Systematic instruction in historical and political science is given to undergraduate students during a period of three years, and to graduate and advanced students for the same length of time.

Students entering this graduate department from other institutions are expected to offer, or supply by additional work, an equivalent to the collegiate course in historical and political science in the Johns Hopkins University. Graduates of other colleges are, however, admitted to graduate work in Baltimore without immediate examination, but, before formal recognition as candidates for the doctor's degree, they must absolve the requirements of graduates of this institution in Group VI (History and Politics), and pass satisfactory oral examinations in the French and German languages. Ability to read at sight French and German authorities upon history, politics, or economics must be shown by actual tests at least one year before the graduate student is admitted to examination for the doctor's degree. A combination of three subjects, one principal and two subordinates, is taken by each candidate. For example: (1) History; (2) Economics; (3) Historical Jurisprudence; or, (1) Economics; (2) History; (3) Politics or (History of Philosophy).

HISTORY AND POLITICS.

Professor HERBERT B. ADAMS has general supervision of department work in historical and political science. Graduate students contemplating a course of study in these branches will confer with him and arrange a proper combination of subjects.

Dr. Adams offers to graduates a course of three years' historical instruction, so arranged in half-yearly classes that the student can enter at the beginning of any semester and complete the whole course in three years from the time of entrance. The six courses in regular sequence are: (1) Early History of Institutions and Greek Politics; (2) Roman History and Politics; (3) Prussian History and Politics; (4) French Absolutism and the Revolution; (5) Germanic and Early English History; (6) American Colonial and Institutional History.

In the year 1895–96, Dr. Adams will conduct the following courses:

1. Seminary of History and Politics.
Thursday evening, fortnightly.

This Seminary is a co-operative society composed of the instructors, Fellows, Scholars, and graduate students in the Department of History and Politics, for the encouragement and promotion of original investigation in American institutional, educational, economic, and social history. Subjects are assigned by the Director to individuals for private research and public report in the Seminary. These reports of progress are discussed, criticised, and referred to committees for further report. The results finally attained may be embodied either in theses for the degree of Doctor of Philosophy, or in other papers, published in the Historical Studies or elsewhere. In addition to these formal papers, brief reports on new books, monographs, and magazine articles are required of Seminary members. These exercises afford valuable training in the art of criticism. The notes are sometimes published in critical journals.

2. Germanic and Early English History.
Two hours weekly, first half-year. For graduates only.

3. American Colonial and Institutional History.
Two hours weekly, second half-year. For graduates only.

4. History of the Nineteenth Century.
One hour weekly, first half-year. For graduates only.

5. History of Civilization.
Two hours weekly, through the year.

This course relates to the art, culture, and religion of ancient civilizations, including the Chaldaean, Egyptian, Hebrew, Phoenician, and Graeco-Roman. Special attention is given to Hebrew and Christian institutions, to the relations of Church and State in the middle ages, and to civilization and culture in the period of the Italian renaissance.

Professor EMMOTT will give the following courses:

6. History and Development of the Common and Statute Law of England.
Two hours weekly, through the year. For graduates and law students.

The lectures on this subject will trace the outlines of the History of the Laws of England, with special reference to those relating to Real Property, and will set forth their leading principles, endeavoring to show how those laws were, until recently, administered by distinct tribunals, the Courts of Common Law, and the Court of Chancery; and to point out the limits of their respective jurisdictions. The course will commence with an examination of the effects of the Teutonic Settlement in England, and of the laws and customs of the Anglo-Saxons relating to property, together with an account of the judicial institutions of the Anglo-Saxons and of Anglo-Saxon vassalage. It will then treat of the sources of the feudal system, of the origin of feudal vassalage, and of the effects of the Norman conquest upon the pre-existing laws and institutions of England, and will comprise a statement of the origin, sources and leading principles of the common law of England relating to real property. Commencing with Magna Charta, the rise and subsequent development of the statute law of England relating to real property will be carefully traced down to the present time, special attention being paid to the legislation of Edward I., and the rise, progress and final establishment of the equitable jurisdiction of the Court of Chancery will be indicated. In the latter part of the course the following topics will be treated: The development and completion of the common law; Littleton's work on tenures; origin and early history of uses or equitable interests in land; the statute of uses (27 Hen. VIII., c. 10), and its principal effects on modern conveyancing; history of the law relating to wills of land; abolition of military tenures; the statute of distribution; the various titles or modes of acquisition of rights over things real.

Books of Reference: Digby's Introduction to the History of the Law of Real Property, Stubbs's Constitutional History of England, Stubbs's Select Charters, Reeves's History of the English Law, Blackstone's Commentaries on the Laws of England.

7. English Constitutional Law and History.
Two hours weekly, through the year. College course open to graduates and law students.

The origin and development of the English Constitution and of the fundamental principles of English Constitutional Law will be carefully and systematically traced from the earliest settlements in Britain down to the present time. Taswell-Langmead's English Constitutional History

will be used as containing an outline sketch of the ground to be covered, with frequent references to the works of Freeman, Stubbs, Hallam, May, Gardiner, Dicey, Anson, Hearn, Bagehot, Traill, Spencer Walpole, and other writers. The instruction will be given by means of lectures, by frequent recitations, and by lectures given by the students themselves on assigned topics.

8. Sources and Literature of English History and the History of Historical Writing in England from the accession of Henry VII.

One hour weekly, through the year. For graduates only.

A systematic account of the materials and a critical examination of the original sources from which our knowledge of the English History of this period is drawn.

NOTE.—In successive years Professor Emmott proposes to lecture upon Historical and Comparative Jurisprudence, and upon the History and Principles of the Roman Law and the History of Roman Institutions.

Dr. J. M. VINCENT, Associate Professor of History, will conduct the following courses:

9. Social and Economic History of the Middle Ages.

Two hours weekly, first half-year. For graduates only.

The progress of European society, particularly in Germany, France, and England, will be traced from the rise of Feudalism to the period of the Reformation. The economic basis of mediæval institutions; the influences of physical conditions, social ideas, and constitutional forms; the regulation of industry and kindred topics will be treated, with the view of showing how far the foundations of modern civilization were laid during the mediæval period.

10. Early Modern Europe.

Two hours weekly, second half-year. For graduates.

This will be a continuation of the history of social progress on the Continent from the fifteenth century to the French Revolution. The development of commerce and industry after the discovery of America, and the consequent changes in political and social ideals, will be traced. The above courses are intended to prepare students both of history and economics for a better understanding of the nineteenth century and of present social conditions.

11. Historical Conference.

Two hours, fortnightly. For graduates.

The object of this work is to encourage critical examination of sources and the weighing of historical evidence. Topics are assigned to members of the conference for study and report in such a way that each student is able to criticise the work of others. The solving of historical problems is required in order to develop the judgment for original work.

NOTE.—During a period of three years, Dr. Vincent offers graduate courses in the Science of History; Historical Bibliography; the History of Modern Historical Writing; Economic and Social History of the Middle Ages and Early Modern Times; the Reformation and the Puritan Revolution; practical exercises in historical criticism and construction.

12. Mediæval and Modern History.

Two hours weekly, through the year. An undergraduate course open to graduates.

The history of Europe since the fall of Rome will be covered partly by lectures and partly by text-books. Essays and reports on illustrative topics will be required from members of the class.

13. History of the Orient and Greece.

Two hours weekly, throughout the year. For undergraduates.

This work, in connection with Roman History, forms a minor course in Ancient History, but either part may be taken separately.

14. Dr. BERNARD C. STEINER, Associate in History, will conduct a class in American Constitutional and Political History.

Two hours weekly, through the year. A collegiate course open to graduates.

15. Professor JAMES SCHOULER, LL. D., of Boston University (Law School) and author of the "History of the United States," will give twenty-five lectures upon the Constitution.

Three hours weekly, in February and March. For graduates.

This course will describe the origin and adoption of the Constitution, with commentaries upon the text, and with historical and legal illustrations.

16. Dr. W. W. WILLOUGHBY, of Washington, D. C., will give twenty-five class lectures on the Theory of the State.

Two hours weekly, beginning in October, 1895.

These class lectures are based upon Bluntschli's Lehre vom Modernen Staat and recent English authorities upon the theory and science of government.

17. Professor WOODROW WILSON, of Princeton College, will give twenty-five lectures on Local Government.

Five hours weekly, beginning in February, 1896.

The specific topics of the courses are: I. The Conditions, Principles, and Historical Development of Local Administrative Organization; disclosed by taking, for exposition, four modern systems, the English, French, Prussian, and American, and considering (1) the different conditions and historical stages of their development; (2) the different principles or conceptions upon which they are based. II. Brief descriptions of these four systems. III. The Administrative Organizations of the Modern Industrial City, discussed in such a way as to attempt to fix, if possible, its place in the general plan of administrative organization. IV. Administrative Justice: the Executive and the Courts.

This course constitutes the third part of a three year course. The lectures of the first year of the course treat of the General Principles of Administration; those of the second year of the Organization and Development of Central Government in the Principal States of the Modern World. The aim of the course, as a whole, is to extract from an examination of the actual workings of government in modern times those general principles of Political Science and Public Law which have won the sanction of experience.

ECONOMICS.

Dr. SIDNEY SHERWOOD, Associate Professor of Economics, will conduct the following courses:

1. Credit, Banking and Money.

Two hours weekly, through the year, beginning in October. For graduates only.

This course will treat of the following topics: The general organization of exchange; the nature and inter-relation of credit, banking and money; the historical development of modern credit and monetary institutions; a concrete account of the present great banking systems and clearing houses of Europe and the United States; the theory and practice of international exchanges; the relation of the credit and monetary systems to the growth of capital, with some particular attention to the recent growth of savings banks, investment companies, and trust companies. The subjects of free coinage, international bimetallism, and the present banking and currency problems of the United States will receive particular attention. An attempt will be made to restate the theory of credit and money, in the light of the above studies, in such a way as to bring it more into harmony with modern conditions than the ordinary statement of the text-books.

2. Economic Conference.

Alternate Friday evenings. For graduates only.

This is an organization formed for the purpose of stimulating and directing original economic research. The results of such research are presented for criticism at the fortnightly meetings. These papers are frequently offered as theses by the candidates for the doctor's degree. The best of them are ordinarily published in the leading economic periodicals. At the beginning of the year several standing committees are appointed to take in charge special parts of the work.

One committee devotes systematic attention to new books and periodical literature, the review of which is a regular feature of the meetings. Another committee has in charge the presentation of reports upon current events of special interest to students of economics, *e. g.* economic and social legislation in different countries, movements of trade, industry, etc.

A special committee or section of the conference is under the direction of Dr. Hollander and is described below. (See course 7.)

3. Advanced Economic Research.

One evening, weekly.

A class restricted to a small number of graduates, most proficient in economic theory, meets two hours weekly for the detailed study of some system or writer.

The first half of the year 1895–96 will be devoted to a critical study of the physiocratic doctrines. Oncken's edition of Quesnay will form the basis of this work. The scope of this study will include, also, for critical purposes, other important physiocratic writers. The connection of the system of doctrine with the economic and social movements of the time, as well as the influence of the school upon subsequent economic writers, will also be examined.

In the second half-year the beginning will be made of a systematic study of the development of political economy in America. The influence in America of the physiocratic doctrines and of Adam Smith and the English School will be traced. The emphasis will, however, be placed upon the independent tendencies in American economic thought. It is expected that this work will be continued in subsequent years, and an attempt will be made to prepare a bibliography of American Economics.

4. Elective Course in Economics for undergraduates.

Two hours weekly, second half-year.

A class designed to meet the needs of the undergraduates who have had at least a two-hour course in economics. It is open also to graduates whose college study of economics has been insufficient. Dr. Hollander has charge of this class the first half-year. (See course 8.)

5. Principles of Economics.

Two hours weekly, first half year. For undergraduates.

Dr. Sherwood's Outlines of Economics with one or two approved text-books for collateral reading. This class during the second half-year is under Dr. Hollander's direction, and studies various practical problems. (See course 11.)

Dr. J. H. Hollander, Instructor in Economics, will conduct the following courses:

6. Historical Development of Economic Theories since Adam Smith.

One hour weekly, throughout the year, beginning in October. For graduates.

The main endeavor in this course will be to emphasize the continuity of English economic thought from Adam Smith to Professor Marshall. Beginning with a brief survey of political and industrial development during the last hundred years, and an outline statement of the growth of political economy as a formal science during the century, the course will attempt to trace in detail the historical development of the fundamental concepts of economic science. This will be done by distinct studies of the evolution of the theories of Rent, Wages, Interest, Value, Population, Capital, Production, and Distribution. The method of treatment will be topical, resulting in a series of cross-sectional views of the history of English economic doctrines. It is believed that the continuity of thought will thus be thrown into bolder relief and a more intelligent appreciation of the emergence of particular theories and of the specific influence of economic conditions be made possible than by the ordinary biographical history. The current of English theory will be examined in the main, but other writers and schools will be considered where direct influence or analogy is discernible. The attempt will be made to trace the influence of certain neglected or less familiar writers, and particular attention will be paid throughout to the literature, original and critical, of service in a study of the history of economic theories.

7. Economic Development of Baltimore. For Graduates.

A section of the Economic Conference will be in charge of Dr. Hollander, and will study the economic growth of Baltimore. The purpose will be to determine and trace the several influences that have shaped the economic development of Baltimore and that contribute to its present economic activity. Such topics will be studied as: The Economic Significance of Chesapeake Bay; Territorial Growth; Changes and Increase in Population; Administration; Financial Life; Railroads; Baltimore Coasting Trade; Flour Industry; Tobacco Trade; Internal Communication, etc., etc. (See course 2.)

8. Advanced Economics.

Two hours weekly, first half-year.

An elective course offered to undergraduates, but designed to prepare graduate students, whose preliminary economic training has been inadequate, for advanced study. A brief survey will first be taken of the elements of Economic Science. Attention will then be centered upon the most recent developments of economic thought and upon current economic discussion. Such books as those of Andrews, Marshall, Clark, Patten, Wieser, Böhm-Bawerk, will be used as the basis of the course.

9. Development of Economic Life and Thought.

Two hours weekly, first half-year. For undergraduates.

10. Practical Economic Problems: Transportation, Labor Organizations, the Tariff.

Two hours weekly, second half-year. For undergraduates, in continuation of course 9.

11. Applied Economics: Money and Banking, Taxation, Socialism.

Two hours weekly, second half-year. For undergraduates.

This course is in continuation of Dr. Sherwood's course on Principles of Economics. (See course 5.)

12. Six Special Lectures by Dr. Frederick Howard Wines: (1) The Genesis of Social Classes; (2) The Classification of Social Evils; (3) The Problem of Poverty; (4) The Problem of Crime; (5) The Duty of the State to Special Classes; (6) Function of the University in Relation to Social Evils.

13. Class lectures on the Public and Private Charities of Baltimore.

One hour weekly, Saturday mornings, beginning in November, 1896.

Lectures open to teachers, district visitors, and other practical workers in Baltimore.

14. Dr. E. R. L. Gould, Professor of Statistics in the University of Chicago and Resident Lecturer in Baltimore, will give twenty-five lectures on Social Economic Legislation.

Two hours weekly, beginning in January, 1896.

The lectures will be an analysis of the leading measures passed during the last twenty years by European and American Legislatures, with the design of improving social-economic relations. The circumstances leading up to this legislation and its results will receive full discussion.

15. Dr. Davis R. Dewey, Professor of Political Economy in the Massachusetts Institute of Technology and a graduate of the Johns Hopkins University, will give twelve lectures on the Conditions and Remedies of Non-Employment.

Five hours weekly, beginning January 12, 1896.

Professor Dewey is one of the three Massachusetts State Commissioners appointed to investigate the subject of the unemployed. The enquiries and observations of this commission have supplied original materials for the above course of lectures. Among the special topics to be presented are the following: influence of machinery; influence of immigration and the introduction of cheaper classes of labor (women and children); the influence of fashion; crises; miscellaneous causes; the amount of unemployment; employment on public works; farm colonization; labor colonies for tramps and wayfarers; employment bureaus; emergency relief; insurance schemes; out-of-work benefits.

Undergraduate Courses.

History, Politics, and Economics.

Undergraduate students are not allowed to take graduate courses, but graduates are admitted to any of the following college courses which may be thought advisable for men who have not done equivalent work elsewhere. These courses, below enumerated, afford sufficient class work for a three years' course in history and politics, embracing four hours weekly the first year; eight hours weekly the second year; and six hours weekly the third year.

1. Origin of Civilization, with Greek and Roman History.
Four hours weekly, through the first college year.
2. Ancient and Mediæval Civilization.
Two hours weekly, through the second college year.
3. Modern European History, including France and England.
Two hours weekly, through the second college year.
4. English Constitutional Law and History.
Two hours weekly, through the third college year.
5. American Constitutional Law and History.
Two hours weekly, through the third college year.
6. Economics.
Four hours weekly, through the second college year.
7. Economics. (Elective Course.)
Two hours weekly, through the third college year.

PHILOSOPHY.

The undergraduate courses in Philosophy provide five hours per week of required work for one year, under the direction of Professor GRIFFIN.

(*a*) Deductive and Inductive Logic.

In this class attention will be given to the general theories of Deduction and Induction; to the forms of thought—notion, judgment, and reasoning; to the application of the rules of the syllogism and the detection of fallacies; and also to the various methods of scientific investigation and proof.

The topics treated will include the following:

(1). Province and definition of logic.
(2). The forms of thought: notion, judgment, reasoning:
(*a*) Terms and their various kinds.
(*b*) The various kinds of propositions or judgments; opposition and conversion.
(*c*) Mediate inference or syllogism.
(*d*) Aristotle's classification of logical and material fallacies.
(3). Methods of scientific investigation and proof.
(4). Fallacies incident to induction.

The work in this class will consist of short informal lectures, recitations, themes, epitomes, etc.

Reference Books: Jevons's Elementary Lessons in Logic, Fowler's Elements of Inductive Logic, with selected passages from the larger works of Jevons, and from the works of Mill, Bain, Venn, Keynes, and other recent writers.

(*b*) Psychology.

The instruction in psychology is intended to give a general view of the results of the new methods of study, the recent investigations in regard to the quality and intensity of sensations, the duration of psychic acts, etc.,—in general, the subjects treated in Part II of Ladd's Physiological Psychology—being presented with sufficient detail to render them intelligible and interesting. A series of lectures and demonstrations on the anatomy and physiology of the nervous system—given in 1894-95 by Dr. L. F. Barker—is included in the course.

Especial emphasis is laid upon the facts of conscious experience as known through introspection, the most important end to be secured being, it is believed, such an understanding of the facts and laws of mental life as shall fit one for wise self-government and effective influence. With this view, such powers and states of mind as attention, memory, association, habit, imagination, the feelings, the will, are discussed in as concrete and practical a way as possible. A text book is used as the basis of instruction, but this is largely supplemented by informal lectures, and by references to various authorities. One essay on an assigned subject is required from each member of the class.

Reference Books: Baldwin's Handbook of Psychology, Sully's Human Mind, James's Psychology, Höffding's Outlines of Psychology, Dewey's Psychology, Hamilton's Lectures on Metaphysics, Porter's Human Intellect, Spencer's Principles of Psychology, Ladd's Physiological Psychology.

(*c*) Ethics.

The fundamental problems of ethics and the application of moral principles to the guidance of conduct and the formation of a manly character are considered with special reference to the Christian theory of morals. The great historic systems—hedonism, utilitarianism, intuitionism—and the relation to ethical theory of the doctrine of evolution are discussed with the purpose of enabling the student to reach a just and intelligent view of the grounds and nature of moral obligation. But, while keeping to a scientific basis, the aim is to make the instruction of a directly practical nature, and to show the bearing of the problems considered upon questions of practical ethics.

The subject is taught by lectures, recitations from a text book—Fowler's Principles of Morals, Part II, being used at present—and references to the works of the most important writers. One essay is required from each member of the class.

Reference Books: Calderwood's Handbook of Moral Philosophy, Janet's Elements of Morals and Theory of Morals, Martineau's Types of Ethical Theory, Sidgwick's Methods of Ethics, Stephen's Science of Ethics, Martensen's Christian Ethics, Smyth's Christian Ethics, Sidgwick's History of Ethics.

An outline of the History of Philosophy.

Weekly, through the year.

For next year the following advanced courses in Philosophy are offered:

1. Modern Philosophy from Descartes to Kant.
Weekly, through the year. Professor GRIFFIN.
2. Modern Ethical Theories.
Fortnightly. Professor GRIFFIN.

CONFERRING OF DEGREES.

Degrees were conferred on the graduates of the year on Thursday, June 13, 1895. The public exercises of the day were held in the Academy of Music at 4 p. m. Prayer was offered by Rev. Dr. Witherspoon, of Baltimore. Addresses were made by Professor M. D. Learned and Professor Fabian Franklin. Degrees were conferred on forty-six Doctors of Philosophy and thirty-six Bachelors of Arts. Certificates were given to ten Proficients in Applied Electricity. (See lists on pages 105 and 106 of this Circular.)

The President of the University announced that Mrs. George H. Williams had instituted a lectureship in geology in commemoration of her husband, the late Professor Williams. The Trustees of the University have invited, as the first lecturer, Sir Archibald Geikie, of London, director of the geological survey of Great Britain and Ireland.

Announcement was also made that Bishop John H. Vincent, of the Methodist Episcopal Church, had been invited to deliver the Levering lectures next winter, and that Professor George Adam Smith, of Glasgow, had accepted an invitation to visit America next year and deliver the lectures on the Percy Graeme Turnbull foundation.

Also that a prize of $100 is offered by a friend of the University for the best essay upon "The Applications of Chemistry to the Useful Arts," to be written by a student, graduate or undergraduate, enrolled at the University this year. (See page 102 of this Circular.)

The honors and prizes of the year and recent appointments were also announced by the President. (See pages 103 and 104 of this Circular.)

In McCoy Hall, before the public exercises of the day, an oil portrait of Professor Williams was presented to the University by a committee representing Dr. Williams's former students and colleagues. It is the work of Mr. Robert Gordon Hardie, of New York. The portrait was unveiled by Professor William B. Clark, acting in behalf of the committee, and the gift was accepted by Mr. C. Morton Stewart, President of the Trustees.

In the evening the President and Faculty received the graduates of the year in McCoy Hall.

PRIZES, 1895-96.

John Marshall Prize.

A likeness, in bronze, of Chief Justice Marshall (the gift of a lady) is awarded annually, by a vote of the Academic Council, to that graduate student who shall have written the best essay on some subject in historical or political science, ancient or modern.

Those who have already received the prize are as follows:

Henry Carter Adams, Ph. D., for his book entitled "Public Debts," [New York, D. Appleton & Co., 1887. 399 pp. 8vo.]

Charles Herbert Levermore, Ph. D., for his history of the "Republic of New Haven," [Baltimore, The Johns Hopkins Press, 1886. 342 pp. 8vo.]

John Martin Vincent, Ph. D., for his work entitled "State and Federal Government in Switzerland," [Baltimore, The Johns Hopkins Press, 1891. 247 pp. 8vo.]

Woodrow Wilson, Ph. D., for his book on "Congressional Government," [Boston, Houghton, Mifflin & Co., 1885. 333 pp. 12mo.]

Charles McLean Andrews, Ph. D., for his work on "The Old English Manor," [Baltimore, The Johns Hopkins Press, 1892. 286 pp. 8vo.]

Amos Griswold Warner, Ph. D., for his book entitled "American Charities: A Study in Philanthropy and Economics," [New York, Crowell & Co., 1894. 430 pp. 12mo.]

Albert Shaw, Ph. D., for his book entitled "Municipal Government in Great Britain," [New York, The Century Co., 1895. 385 pp. 12mo.]

Prizes for Essays.

Mr. C. Morton Stewart, President of the Board of Trustees, has offered to the University the amount requisite for the bestowal of the prizes named below, the purpose of which is to encourage, among undergraduate students, proficiency in English composition, and also to stimulate, among those who have taken the bachelor's degree, a continued interest in study and in the art of expression.

Essays written in competition for these prizes must give evidence both of careful thought and of literary skill in the presentation of thought. They must be presented in the handwriting of the author, and, if illegible or carelessly prepared, they will be thrown out of the competition. Prizes will be withheld, if none of the essays presented is considered worthy of a prize.

Each competitor should sign his essay with an assumed name, and should leave with his essay a sealed envelope containing his true name and superscribed with his assumed name. Essays must be written upon one side of letter paper of good quality, with a blank margin of not less than one inch.

The names of successful competitors will be publicly announced.

To Graduates.

I. A prize of one hundred dollars is offered for the best essay written by a Bachelor of Arts of the Johns Hopkins University, of not more than five years' standing. Members of the class of 1891 and of subsequent classes may compete for this prize.

The following subjects are assigned:

(1). Gustavus Adolphus and his Relation to the Thirty Years' War.
(2). The Historical and the Literary Wallenstein.
(3). The Political Questions leading to the Thirty Years' War.
(4). The Religious Interests involved in the Thirty Years' War.

II. A prize of one hundred dollars is offered for the best essay written by any graduate student of the Johns Hopkins University (whether a Bachelor of Arts of this University, or not)—except a fellow by courtesy or a fellow—enrolled, under the Faculty of Philosophy, in full standing, i. e., not as an "attendant upon lectures."

The following subjects are assigned:

(1). Godfrey of Bouillon and the First Crusade.
(2). The Reign of Frederic Barbarossa.
(3). Tancred and the Struggle for Sicily.
(4). The Kingdom of Jerusalem.

The above-mentioned prizes will not both be awarded to the same person.

The essays must be left with the Registrar on or before the first of May, 1896.

To Undergraduates.

III. A prize of thirty dollars and a prize of twenty dollars are offered to matriculated students of the first year (class of 1897) for the best essays written upon any of the following subjects:

(1). Dr. Johnson and his Friends.
(2). The Defence of Socrates.
(3). The Character of Benjamin Franklin.
(4). A day in Rome in the time of Cicero.
(5). The result of Polar Expeditions.
(6). Inter-oceanic Canals.

The essays must be left with the Registrar on or before the fifth of October, 1895.

IV. A prize of fifty dollars is offered to matriculated students of the second and third years for the best essay upon any one of the following subjects:

(1). The political attitude of Edmund Burke during the American Revolution.
(2). Sir Thomas More.
(3). A comparison of Tennyson's two poems, entitled Locksley Hall.
(4). Charles Darwin.
(5). The French Academy.
(6). Alexander Hamilton and Thomas Jefferson.

This prize is open to the classes of 1895 and 1896.

The essays must be left with the Registrar on or before the fifth of October, 1895.

Prize for Essays on "The Relations of Chemistry and the Useful Arts."

A friend of the University resident in Baltimore has kindly offered the sum of $100, to be awarded as a prize to the writer of the best essay on "The Relations of Chemistry and the Useful Arts," under such conditions as the University may prescribe.

The competition is restricted to those who have been students, graduate or undergraduate, in the Johns Hopkins University during the academic year 1894–95.

The essay must give evidence of independent thought, such as may result from acquaintance with or study of one or more of the useful arts that are dependent upon Chemistry. A compilation from books will not be accepted. There must also be literary skill in the presentation of thought. The essays must be presented in the handwritiug of the author, and, if illegible or carelesssly prepared, they will be thrown out of the competition. Prizes will be withheld, if none of the essays presented is considered worthy of a prize.

Each competitor should sign his essay with an assumed name, and should leave with the essay a sealed envelope containing his true name and superscribed with his assumed name. Essays must be written upon one side of letter paper of good quality, with a blank margin of not less than one inch.

The names of successful competitors will be publicly announced.

The essays must reach the Registrar on or before October 9, 1895.

A Prize for Skill in Public Speaking.

A prize of fifty dollars is offered by a lady of Baltimore to that matriculated student who shall prepare and deliver in public the best address upon any one of the following subjects:

(1). The necessity of Political Parties.
(2). The typical American.
(3). The effect upon Japan of the recent war between China and Japan.
(4). A danger that threatens our Country.
(5). The three men who made modern Germany.
(6). The effect that railroad building has had upon the prosperity of the United States.

This prize is open to the classes of 1896 and 1897.

A written copy of the address, signed with an assumed name, must be left with the Registrar on or before the fifth of October, 1895.

At an appointed time such addresses as are found worthy will be delivered in public, and the prize will be awarded, by a committee of judges, to the competitor whom they consider most deserving,—having regard to his thought and literary expression, and especially to his delivery.

The time for the oral delivery will be limited to twelve minutes.

D. C. Gilman, *President.*

RECENT APPOINTMENTS AND HONORS, ANNOUNCED JUNE 13, 1895.

The following appointments and promotions have recently been made by the Trustees:—

Charles L. Poor, Ph. D., now Associate, to be Associate Professor of Astronomy.

Alexander S. Chessin, Ph. D., now Lecturer, to be Associate Professor of Mathematics and Mechanics.

Sidney Sherwood, Ph. D., now Associate, to be Associate Professor of Political Economy.

John M. Vincent, Ph. D., now Associate, to be Associate Professor of History.

Simon Flexner, M. D., now Associate, to be Associate Professor of Pathology.

William S. Thayer, M. D., to be Associate in Medicine.

Herbert G. Geer, M. E., now Instructor, to be Associate in Mechanical Engineering.

Edward B. Mathews, Ph. D., now Instructor, to be Associate in Mineralogy.

Abraham Cohen, Ph. D., lately Fellow, to be Instructor in Mathematics.

Jacob H. Hollander, Ph. D., now Assistant, to be Instructor in Economics.

Fonger De Haan, Ph. D., now Assistant, to be Instructor in Romance Languages.

Harry C. Jones, Ph. D., lately Fellow, to be Instructor in Physical Chemistry.

Thomas S. Baker, Ph. D., lately Fellow, to be Assistant in German.

George C. Keidel, Ph. D., now Fellow, to be Assistant in Romance Languages.

Charles P. Sigerfoos, S. B., to be Assistant in Zoology and Embryology.

Harry L. Wilson, A. M., to be Instructor in Greek and Latin.

The gentlemen named below have been invited to lecture in the University during the academic year 1895–96:

Turnbull Lecturer:

Professor George Adam Smith, of Glasgow.

Levering Lecturer:

Bishop John H. Vincent, D. D.

On a lectureship commemorative of the late Professor Williams:

Sir Archibald Geikie, F. R. S., LL. D., of London.

On a lectureship given by Mr. J. B. Noel Wyatt:

Professor W. R. Ware, LL. D., of Columbia College.
Messrs. Henry Van Brunt, of Kansas City, Mo., and
Howard Walker, of Boston, Mass.

In History and Politics:

Woodrow Wilson, Ph. D., LL. D., of Princeton College.
James Schouler, LL. D., of Boston University.
Elgin R. L. Gould, Ph. D., of the University of Chicago.
Davis R. Dewey, Ph. D., of the Massachusetts Institute of Technology.
Westel W. Willoughby, Ph. D., of Washington, D. C.

In Geology:

Messrs. Grove K. Gilbert, and
Bailey Willis, of the United States Geological Survey.

In French Literature:

Frederick M. Warren, Ph. D., of Adelbert College.

In Botany:

James E. Humphrey, Sc. D.

Prizes.

John Marshall Prize.

A likeness in bronze of the former Chief Justice of the United States (the gift of a lady in New England), awarded annually for an important contribution to historical and political science published by a graduate student of this University, is awarded to the gentlemen named below:—

For 1894,—to Professor Amos Griswold Warner, Ph. D., of the Leland Stanford Junior University, for his book entitled "American Charities: A Study in Philanthropy and Economics"

For 1895,—to Albert Shaw, Ph. D., American Editor of the "Review of Reviews," for his book entitled "Municipal Government in Great Britain."

C. Morton Stewart Prize.

The prize of one hundred dollars, offered for the best essay written by a Bachelor of Arts of the Johns Hopkins University of not more than five years' standing, is awarded to W. Stuart Symington, Jr. (A. B., 1891). The subject of his essay is "The Influence of the Medici on Literature and Learning."

Adam T. Bruce Fellows.

Henry McElderry Knower, of Baltimore, A. B., Johns Hopkins University, 1890, now Fellow in Zoology.

George Lefevre, of Baltimore, A. B., Johns Hopkins University, 1891, now Fellow in Zoology.

Fellows.

Norman Ross Carmichael, of Strange, Ont., A. M., Queen's University (Ont.), 1890. *Physics.*

Arthur Douglas Chambers, of Toronto, Ont., A. B., University of Toronto, 1892. *Chemistry.*

Frank Hollinger Clutz, of Atchison, Kan., A. B., Midland College, 1892. *Astronomy.*

Franklin Story Conant, of Wellesley Hills, Mass., A. B., Williams College, 1893. *Zoölogy.*

William Jackson Humphreys, of Virginia, A. B., Washington and Lee University, 1886. *Physics.*

Reid Hunt, of Martinsville, O., A. B., Johns Hopkins University, 1891. *Physiology.*

Oliver Martin Johnston, of Bastrop, La., A. B., Mississippi College, 1890. *Romance Languages.*

Gordon Jennings Laing, of Toronto, Ont., A. B., University of Toronto, 1891. *Latin.*

Caspar Levias, of New York City, A. B., Columbia College, 1893. *Semitic Languages.*

Louis Eugene Livingood, of Philadelphia, Pa., A. B., Princeton University, 1890; M. D., University of Pennsylvania, 1895. *Pathology.*

Ebenezer Mackay, of New Glasgow, Nova Scotia, A. B., Dalhousie University, 1886. *Chemistry.*

John McLaren McBryde, Jr., of Blacksburg, Va., A. B., University of South Carolina, 1890. *English.*

Henry Ludwell Moore, of Baltimore, A. B., Randolph Macon College, 1892. *Economics.*

Charles William Peppler, of Baltimore, A. B., Johns Hopkins University, 1892. *Greek.*

Franklin Lafayette Riley, of Hebron, Miss., A. B., Mississippi College, 1889. *History.*

Frederick George Gottlob Schmidt, of Baltimore. *German.*

John Adams Scott, of Evanston, Ill., A. B., Northwestern University, 1891. *Greek.*

George Otis Smith, of Skowhegan, Me., A. B., Colby University, 1893. *Geology.*

M. Victor Staley, of Oshkosh, Wis., A. B., University of Wisconsin, 1893. *Sanskrit.*

Thomas Hardy Taliaferro, of Baltimore, C. E., Virginia Military Institute, 1890. *Mathematics.*

Harry Langford Wilson, of Kingston, Ont., A. B., Queen's University (Ont.), 1887. *Latin.*

Hopkins Scholarships.

OFFERED TO VIRGINIA AND NORTH CAROLINA STUDENTS.

These scholarships, in accordance with the wishes of the Founder, are awarded to candidates from Virginia and North Carolina who are considered by the Academic Council to be most deserving of choice because of their character and intellectual promise. They are awarded to college graduates; the Maryland scholarships, elsewhere announced, are given to undergraduates:

Honorary Scholarships:

E. C. Armstrong (A. B., Randolph Macon, 1890), of Front Royal, Va.
J. H. Bowman (A. B., Franklin and Marshall, 1893), of Woodstock, Va.
J. A. C. Chandler (A. B., William and Mary, 1891), of Guiney's, Va.
W. B. Daniel (A. M., Wake Forest, 1892), of Garysburg, N. C.
C. R. Duvall (S. B., West Va. Univ., 1891), of Stephenson, Va.
E. L. Green (A. B., Washington and Lee, 1892), of Richmond, Va.
W. A. Jones (A. M., Wake Forest, 1893), of Hillsboro, N. C.
B. W. Kilgore (S. B., Miss. Agric. Coll., 1888), of Raleigh, N. C.
W. A. Montgomery, Jr. (A. B., Johns Hopkins, 1892), of Warrenton, N. C.
C. D. Ragland (A. B., Randolph Macon, 1889), of Hyco, Va.
E. W. Sikes (A. M., Wake Forest, 1891), of Monroe, N. C.
F. S. Wilcox (S. C. Military Acad., 1893), of Lynn, N. C.

Scholarships:

T. M. Anderson (B. L., Richmond Coll., 1882), of Glade Spring, Va.
B. W. Arnold, Jr. (A. B., Randolph Macon, 1891), of Bedford City, Va.
C. B. Cannady (A. B., Roanoke, 1892), of Salem, Va.
Killis Campbell (A. B., William and Mary, 1894), of Enfield, Va.
Hall Canter (A. B., Randolph Macon, 1892), of Front Royal, Va.
M. M. Corbin (Va. Military Institute, 1894), of Comorn, Va.
W. F. Gill (A. B., Trinity, N. C., 1894), of Henderson, N. C.
R. H. Griffith (A. M., Furman, 1892), of Asheville, N. C.
W. S. Hancock (Va. Military Institute, 1890), of Wilmington, N. C.
J. R. Hankins (A. B., Wake Forest, 1890), of Carthage, N. C.
C. C. Holden (A. B., Johns Hopkins, 1888), of Raleigh, N. C.
E. W. Kennedy (A. B., Univ. of Tennessee, 1880), of Durham, N. C.
Francis Mallory (C. E., Va. Military Institute, 1889), of Tappahannock, Va.
C. W. Prettyman (A. B., Dickinson, 1891), of Winston, N. C.
E. E. Reid (A. M., Richmond Coll., 1892), of Lynnhaven, Va.
Garnett Ryland (A. M., Richmond Coll., 1892), of Richmond, Va.
R. F. Whitehead (A. M., Univ. of Va., 1893), of Lovingston, Va.

Honors of the Undergraduates.

The standing of students in the class about to graduate, who are entitled to honors, is as follows:

Edward Spiller Oliver.
Marcus Kaufman.
Gilbert Abraham Coblens.
George Oscar James.
Stuart Symington Janney.
Hanson Briscoe Black.
Milton Daniel Greenbaum.
Lawrason Brown.
Campbell Easter Waters.
Jacob Hall Pleasants, Jr.
George Dobbin Brown.

In accordance with the regulations, University Scholarships are awarded to the first ten students named above, who stand first in point of scholarship.

The standing of students of the second year who are entitled to honors is as follows:

Arthur Webster Machen, Jr.
St. George Leakin Sioussat.
Henry Lanahan.
Charles Edward Caspari.
John Wesley Richardson Sumwalt.
William Fisher Wallis.
Laurence Frederick Schmeckebier.
{ William Kurrelmeyer.
{ Louis Rosenbaum.
{ Monroe Luchs.
{ John Armistead Welbourn.
Thomas Sewell Adams.
Richard Elliott Marine.
{ Clarence Carroll Clark.
{ Charles Edward Diehl.
{ Albert Dale Gantz.
{ Albert Cabell Ritchie.
Cornelius Beatty.
Frank Holmes Johnson.
William Reginald Dorsey.

The standing of students of the first year who are entitled to honors is as follows:

{ Frank Ringgold Blake.
{ David Emrich Weglein.
Herbert Henry Adams.
Charles Keyser Edmunds.
Josiah Morris Slemons.
John Edgar Knipp.
{ Eugene de Forest Heald, Jr.
{ Louis Marshall Warfield, Jr.
{ George Miltenberger Clarke.
{ Warfield Theobald Longcope.
{ Alexander Henry Schulz, Jr.
Edward Maguire Adams.
Henry Merryman Wilson.

The Hopkins Scholarships which are awarded to residents of Maryland only, are bestowed as follows:

Second Year.

Honorary Scholarships:

Arthur Webster Machen, Jr.
St. George Leakin Sioussat.
Henry Lanahan.

Scholarships:

Charles Edward Caspari.
John Wesley Richardson Sumwalt.

First Year.

Honorary Scholarships:

Frank Ringgold Blake.
David Emrich Weglein.
Charles Keyser Edmunds.

Scholarships:

Josiah Morris Slemons.
John Edgar Knipp.

Washington Scholarships are awarded to the following:

Herbert Henry Adams.
Monroe Luchs.

Charles P. Sigerfoos, S. B., has been designated by the Trustees as Assistant in charge of the Marine Laboratory of the University, to be stationed at Beaufort, N. C., during the summer of 1895.

Arthur L. Lamb, A. B., and Hubert L. Clark, A. B., have the honor of being assigned to the table allotted to this University in the Laboratory of the U. S. Fish Commission, Woods' Holl, Mass.

DEGREES CONFERRED JUNE 13, 1895.

Doctors of Philosophy.

Rufus Mather Bagg, of Massachusetts, A. B., Amherst College, 1891. *Subjects:* Organic Geology, Inorganic Geology, and Biology. *Thesis:* The Cretaceous Foraminifera of New Jersey.

Referees on thesis: Professor Clark and Mr. Bailey Willis.

Thomas Stockham Baker, of Baltimore, A. B., Johns Hopkins University, 1891. *Subjects:* German, Romance Languages, and History. *Thesis:* America as the Poetical Utopia of Lenau and the Politico-Literary Ideal of Kürnberger and Young Germany.

Referees on thesis: Professors Wood and Learned.

James Curtis Ballagh, of Virginia, A. B. (*extra ordinem*), Johns Hopkins University, 1894. *Subjects:* History, Economics, and Jurisprudence. *Thesis:* White Servitude in the Colony of Virginia.

Referees on thesis: Professor Adams and Dr. Vincent.

Daniel Base, of Baltimore, A. B., Johns Hopkins University, 1891. *Subjects:* Chemistry, Physics, and Mathematics. *Thesis:* Some Double Halides of Zinc.

Referees on thesis: Professors Remsen and Morse.

Henry Marvin Belden, of Connecticut, A. B., Trinity College (Conn.), 1888. *Subjects:* English, German, and Philosophy. *Thesis:* The Prepositions *in, on, to, for, fore,* and *æt* in Anglo-Saxon: A Study of Case Values in Old English.

Referees on thesis: Professors Bright and Browne.

Arthur Fisher Bentley, of Nebraska, A. B., Johns Hopkins University, 1892. *Subjects:* Economics, Philosophy, and Jurisprudence. *Thesis:* The Units of Investigation in the Social Sciences.

Referees on thesis: Professor Adams and Dr. Sherwood.

Samuel Walker Beyer, of Iowa, S. B., Iowa Agricultural College, 1889. *Subjects:* Inorganic Geology, Organic Geology, and Chemistry. *Thesis:* The Sioux Quartzite near Sioux Falls in South Dakota, with especial reference to an Intrusive Diabase.

Referees on thesis: Professor Clark and Mr. Bailey Willis.

William Bromwell, of Maryland, A. B., Johns Hopkins University, 1888. *Subjects:* Chemistry, Mineralogy, and Geology. *Thesis:* A Study of the Nitrate and Sulphate of Orthodiazotoluene and the action of the Sulphate on Methyl Alcohol.

Referees on thesis: Professors Remsen and Morse.

Clarence Griffin Child, of Rhode Island, A. B., Trinity College (Conn.), 1886. *Subjects:* English, German, and French. *Thesis:* Palatalization in English: I. Anglo-Saxon Dialects.

Referees on thesis: Professors Bright and Browne.

Fonger De Haan, of Baltimore. *Subjects:* Spanish, French, and Arabic. *Thesis:* An Outline of the History of the Novela Picaresca in Spain.

Referees on thesis: Professor Elliott and Dr. Marden.

Charles Sumner Estes, of Maine, A. B., Colby University, 1884. *Subjects:* History, Latin, and Roman Law. *Thesis:* Christian Missions in China.

Referees on thesis: Professor Adams and Dr. Vincent

Henry Fay, of Pennsylvania, A. B., Lafayette College, 1889. *Subjects:* Chemistry, Mineralogy, and Physics. *Thesis:* The Action of Light on some Organic Acids in the presence of Uranium Salts.

Referees on thesis: Professors Remsen and Morse.

Henry Stewart Gane, of Illinois, A. B., Amherst College, 1891. *Subjects:* Organic Geology, Inorganic Geology, and Biology. *Thesis:* The Neocene Corals of the United States.

Referees on thesis: Professor Clark and Mr. Bailey Willis.

George William Gray, A. B., Johns Hopkins University, 1890. *Subjects:* Chemistry, Mineralogy, and Geology. *Thesis:* The Chlorides of Paranitroorthosulphobenzoic Acid.

Referees on thesis: Professors Remsen and Morse.

John Joseph Griffin, of Massachusetts, A. B., Ottawa University (Ont.), 1881. *Subjects:* Chemistry, Physics, and Mathematics. *Thesis:* On the Reaction of Ethyl and Methyl Alcohols with Paradiazometatoluenesulphonic Acid in the presence of certain substances; and on Metatoluenesulphonic Acid.

Referees on thesis: Professors Remsen and Morse.

William August Haussmann, of Pennsylvania, A. B., Johns Hopkins University, 1892. *Subjects:* German, English, and Philosophy. *Thesis:* German-American Hymnology.

Referees on thesis: Professors Wood and Learned.

John Haynes, of Massachusetts, A. B., Williams College, 1888. *Subjects:* Economics, History, and Social Science. *Thesis:* Risk as an Economic Factor.

Referees on thesis: Doctors Sherwood and Hollander.

Samuel Rivers Hendren, of Virginia, A. B., Washington and Lee University, 1892. *Subjects:* History, Jurisprudence, and Philosophy. *Thesis:* The Indians of Colonial Virginia: A Study of their Institutions and Social Culture.

Referees on thesis: Professor Adams and Dr. Vincent.

Howard Haines Higbee, of Ohio, A. B., Yale University, 1884. *Subjects:* Chemistry, Mineralogy, and Geology. *Thesis:* The Double Halides of Antimony, with Aniline and the Toluidines.

Referees on thesis: Professors Remsen and Morse.

Rockwell Dennis Hunt, of California, Ph. B., Napa College, 1890. *Subjects:* History, Economics, and Philosophy. *Thesis:* The Genesis of California's First Constitution, 1846–49.

Referees on thesis: Professor Adams and Dr. Vincent.

Joseph Rufus Hunter, of North Carolina, A. B., Wake Forest College, 1885. *Subjects:* Chemistry, Mineralogy, and Physics. *Thesis:* The Relation of the Anilides of Orthosulphobenzoic Acid.

Referees on thesis: Professors Remsen and Morse.

George Wesley Johnston, of Canada, A. B., University of Toronto, 1886. *Subjects:* Latin, Greek, and Sanskrit. *Thesis:* A Syntactical Study of the Querolus: A late Latin Comedy of unknown Authorship attributed in the MSS. to Plautus.

Referees on thesis: Professors Warren and Smith.

Thomas Franklin Kane, of Indiana, A. B., De Pauw University, 1888. *Subjects:* Latin, Greek, and Sanskrit. *Thesis:* Case Forms with or without Prepositions used by Plautus and Terence to express Time.

Referees on thesis: Professors Warren and Smith.

William Jay Karslake, of New York, S. B., Lafayette College, 1891. *Subjects:* Chemistry, Mineralogy, and Mathematics. *Thesis:* I. Orthocyanbenzenesulphonic Acid; II. The Action of Alcohols upon the High-melting Chloride of Orthosulphobenzoic Acid.

Referees on thesis: Professors Remsen and Morse.

George Charles Keidel, of Maryland, A. B., Johns Hopkins University, 1889. *Subjects:* French, Italian, and Latin. *Thesis:* The *Évangile aux Femmes,* an Old-French Satire on Women edited with Notes.

Referees on thesis: Professor Elliott and Dr. Menger.

William Hamilton Kirk, of Pennsylvania, A. B. (*extra ordinem*), Johns Hopkins University, 1893. *Subjects:* Greek, Latin, and Sanskrit. *Thesis:* Demosthenic Style in the Private Orations.

Referees on thesis: Professors Gildersleeve and Spieker.

John Holladay Latané, of Baltimore, A. B., Johns Hopkins University, 1892. *Subjects:* History, Jurisprudence, and Economics. *Thesis:* The Early Relations between Maryland and Virginia.

Referees on thesis: Professors Adams and Browne.

Exum Percival Lewis, of the District of Columbia, S. B., Columbian University, 1888. *Subjects:* Physics, Mathematics, and Astronomy. *Thesis:* The Measurement of some Standard Wave-Lengths in the Infra-Red Spectra of the Elements.

Referees on thesis: Professors Rowland and Ames.

Solomon Reid McKee, of North Carolina, A. B., Davidson College, 1888. *Subjects:* Chemistry, Mineralogy, and Physics. *Thesis:* A further Investigation of the Chlorides of Orthosulphobenzoic Acid.

Referees on thesis: Professors Remsen and Morse.

Thomas Francis Moran, of Michigan, A. B., University of Michigan, 1887. *Subjects:* History, Economics, and Social Science. *Thesis:* The Rise and Development of the Bicameral System in America.

Referees on thesis: Professor Adams and Dr. Vincent.

Louis Trenchard More, of Missouri, Ph. B., Washington University, 1892. *Subjects:* Physics, Mathematics, and Electricity. *Thesis:* On the Changes in Length produced in Iron Wires by Magnetization.

Referees on thesis: Professors Rowland, Ames, and Duncan.

Anthony Moultrie Muckenfuss, of South Carolina, A. B., Wofford College, 1889. *Subjects:* Chemistry, Mineralogy, and German. *Thesis:* Some Transformations of Parasulphaminebenzoic Acid.

Referees on thesis: Professors Remsen and Morse.

Lyman Churchill Newell, of Rhode Island, Ph. B., Brown University, 1890. *Subjects:* Chemistry, Mineralogy, and German. *Thesis:* Parabenzoyldiphenylsulphone and Related Compounds.

Referees on thesis: Professors Remsen and Morse.

James Flack Norris, of Baltimore, A. B., Johns Hopkins University, 1892. *Subjects:* Chemistry, Mineralogy, and Physics. *Thesis:* Some Double Salts containing Selenium.

Referees on thesis: Professors Remsen and Morse.

Edwin Fitch Northrup, of New York, A. B., Amherst College, 1891. *Subjects:* Physics, Mathematics, and Electricity. *Thesis:* A Method for comparing the Values of the Specific Inductive Capacity of a Substance under slowly and rapidly changing Fields: Results for Paraffin and Glass.

Referees on thesis: Professors Rowland, Ames, and Duncan.

Robert Somerville Radford, of Virginia, B. Ph., University of Virginia, 1889. *Subjects:* Greek, Latin, and Sanskrit. *Thesis:* On the Thing as the Subject of the Verb in the Attic Orators and Thucydides.

Referees on thesis: Professors Gildersleeve and Spieker.

René de Saussure, of France, École Polytechnique, Paris. *Subjects:* Mathematics, Physics, and Philosophy. *Thesis:* Sur la Génération des Courbes par Roulement.

Refcrees on thesis: Professors Craig and Franklin.

Thomas Edward Shields, of Minnesota, A. M., St. Mary's Seminary, 1892. *Subjects:* Physiology, Zoölogy, and Chemistry. *Thesis:* The Effect upon the Blood Flow of Olfactory Sensations, of Mental Work, and of Stimulation of the Terminations of the Trigeminal Nerve in the Mucous Membrane of the Nose by Irritant Vapors, studied by means of a Plethysmograph on the Arm.

Referees on thesis: Professor Howell and Dr. Dreyer.

John Archer Silver, of Baltimore, A. B., Princeton University, 1886. *Subjects:* History, Philosophy, and Jurisprudence. *Thesis:* The Provisional Government of Maryland.

Referees on thesis: Professor Adams and Dr. Steiner.

Alfred William Stratton, of Canada, A. B., University of Toronto, 1887. *Subjects:* Sanskrit, Greek, and English. *Thesis:* Chapters in the History of Greek Noun-formation.

Referees on thesis: Professors Bloomfield and Gildersleeve.

William Stuart Symington, Jr., of Baltimore, A. B., Johns Hopkins University, 1891. *Subjects:* French, Spanish, and History. *Thesis:* The Folk-lore of May-day in France.

Referees on thesis: Professor Elliott and Dr. Menger.

Masayoshi Takaki, of Japan, S. B., Syracuse University, 1891. *Subjects:* Economics, History, and Social Science. *Thesis:* The History of Japanese Paper Currency, 1868–1890.

Referees on thesis: Doctors Sherwood and Hollander.

Robert Richardson Tatnall, of Delaware, S. B., Haverford College, 1890. *Subjects:* Physics, Mathematics, and Chemistry. *Thesis:* The Arc-Spectra of the Elements.

Referees on thesis: Professors Rowland and Ames.

Thaddeus Peter Thomas, of Baltimore, B. P., University of Tennessee, 1885. *Subjects:* History, Economics, and Philosophy. *Thesis:* The City Government of Baltimore.

Referees on thesis: Professor Adams and Dr. Hollander.

James Waddell Tupper, of Nova Scotia, A. B., Dalhousie University, 1891. *Subjects:* English, German, and French. *Thesis:* Tropes and Figures in Anglo-Saxon Prose.

Referees on thesis: Professors Bright and Browne.

William Achenbach Wetzel, of Pennsylvania, A. B., Lafayette College, 1891. *Subjects:* Economics, History, and Social Science. *Thesis:* Benjamin Franklin as an Economist.

Referees on thesis: Doctors Sherwood and Hollander.

Bachelors of Arts.

Wilbur Withrow Ballagh, of New Jersey.
William Sherman Bansemer, of Baltimore.
Harry Bissing, of Baltimore.
Hanson Briscoe Black, of West Virginia.
Charles Henry Hardin Branch, of Ellicott City, Md.
George Dobbin Brown, of Howard County, Md.
Lawrason Brown, of Baltimore.
Humphrey Warren Buckler, of Baltimore.
William Mack Chowning, of Illinois.
Charles Bevan Clark, of Baltimore.
Gilbert Abraham Coblens, of Baltimore.
Reuben Carll Foster, of Baltimore.
Frank Taylor Fulton, of Illinois.
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Campbell Easter Waters, of Baltimore.
Arthur Charles Watkins, of Baltimore.
Henry Abel Whitaker, of Forest Hill, Md.
William Whitridge Williams, of Baltimore.
William Wingert, of Hagerstown, Md. (36)

Proficients in Applied Electricity.

Harry Bissing, of Baltimore.
Byron Briggs Brackett, of New York.
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Edson Fessenden Gallaudet, of the District of Columbia.
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Alexander McIver, Jr., of North Carolina.
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Charles Reutlinger, of Philadelphia.
John Jacob Rothermel, of Pennsylvania.
Frank Semple Wilcox, of North Carolina. (10)

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